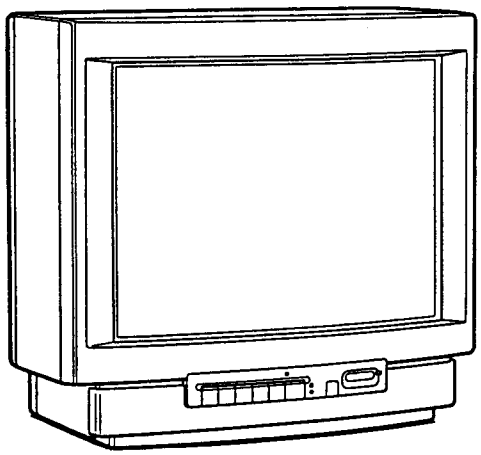
KV-20TS28
RM-783

SERVICE MANUAL

US Model
Chassis No. SCC-D37M-A

Canadian Model
Chassis No. SCC-D36J-A



P3B CHASSIS

MODELS OF THE SAME SERIES	
KV-20TS28	
KV-20TR22	
KV-20TS27	

SPECIFICATIONS

Television system	American TV standards
Channel caverage	VHF : 2-13 UHF : 14-69 Cable TV : 1-125
Picture tube	Microblack™ Trinitron tube 20-inch picture measued diagonally 21 - inch picture tube measured diagonally
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO INPUT (phono jacks) Video : 1Vp-p, 75-ohms unbalanced, sync negative Audio : 500mVrms (100% modulation) Impedance : 10 kilohms
Output	AUDIO OUTPUT (VARIABLE) (phono jacks) More than 408 mVrms at the maximum volume setting (variable) (100% modulation)
Speaker size	50×90mm×2 (2″ ×3⅜″)
Internal audio power	2W×2
Power requirements	120V AC, 60Hz
Power consumption	125W (Max.) 5W (in standby condition)
Dimensions	527.0×488.5×482.0mm (W/H/D) (20¾″ ×19¼″ ×19″)
Weight	23.4kg (51 lbs 10 oz)
Supplied accessories	RM-783 Remote commander (1) with 2 size AA (R6) batteries except Canada VHF/UHF telescopic dipole antenna (1) Antenna connector (1)
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-606/607M VMC-810/820S RK-74A

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR TV

SONY®

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WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

SAFETY CHECK-OUT
(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts; particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

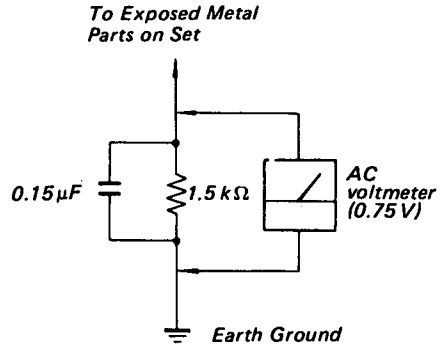


Fig. A. Using an AC voltmeter to check AC leakage.

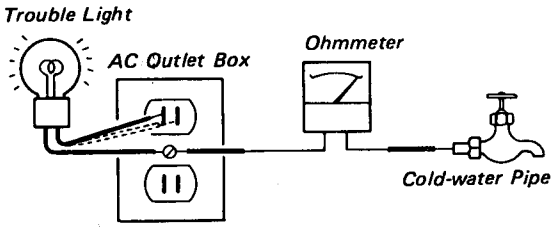
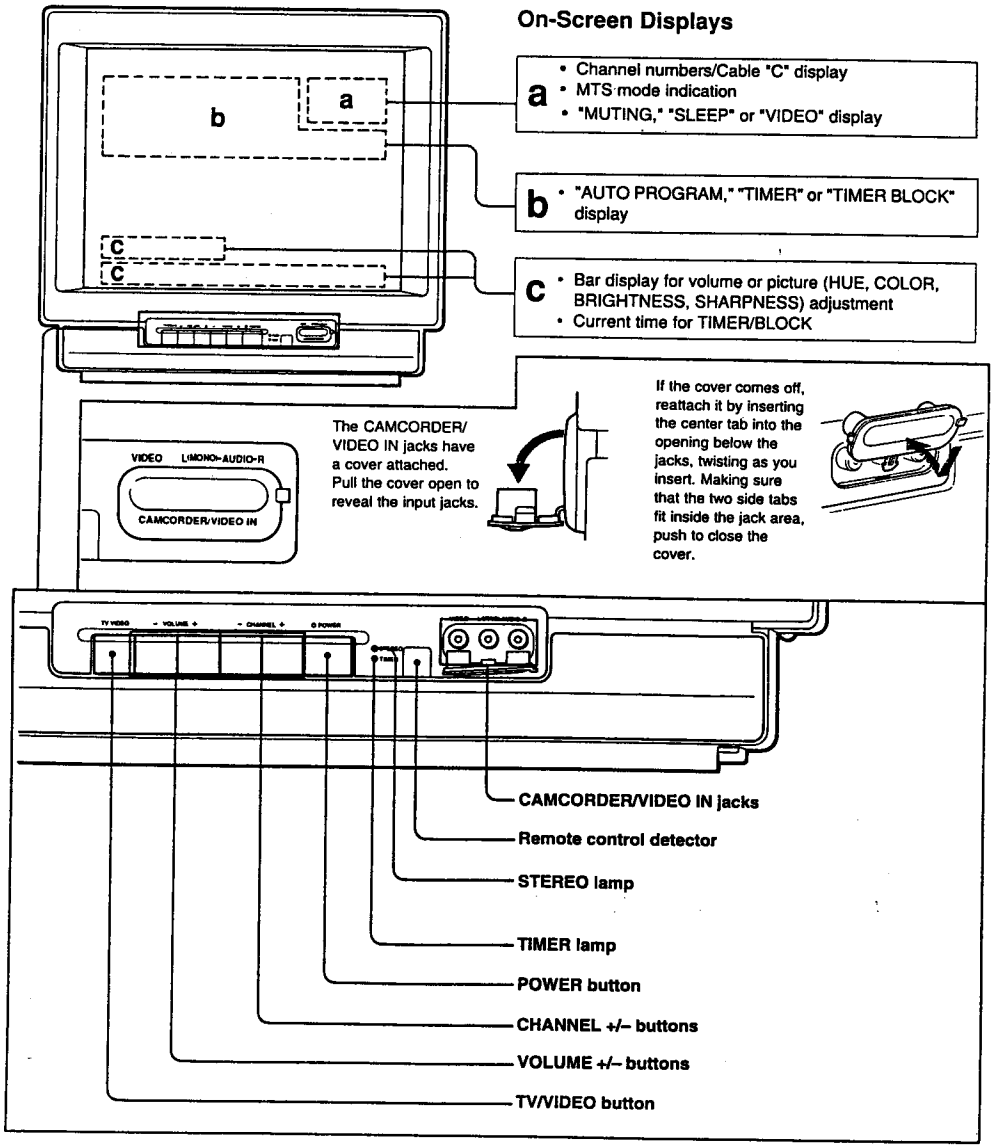


Fig. B. Checking for earth ground.

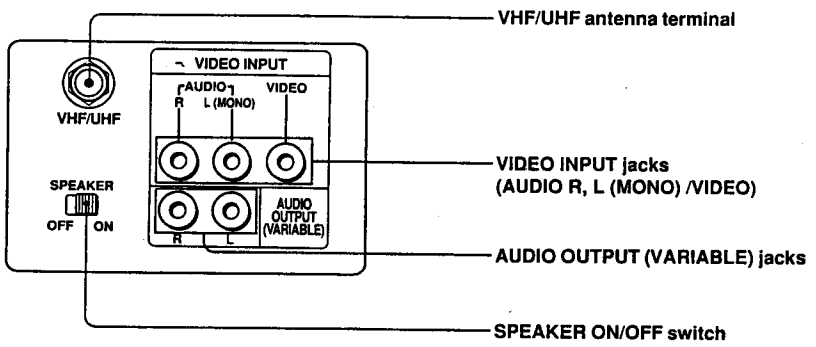
SECTION 1
GENERAL

1-1. LOCATION OF CONTROLS

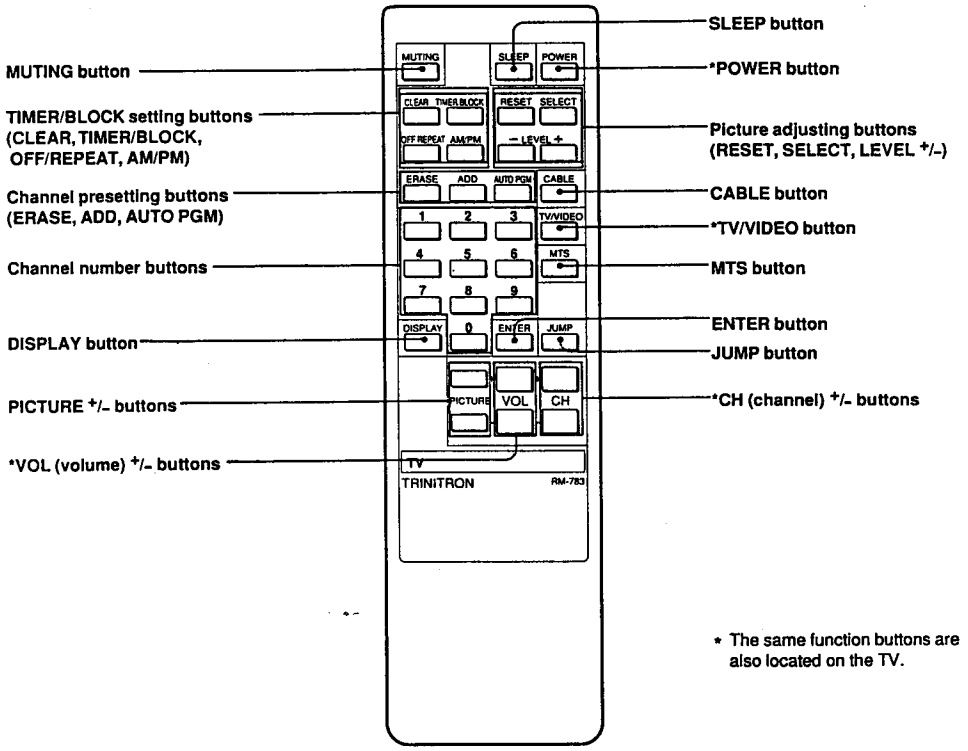
Front


On-Screen Displays
a
• Channel numbers/Cable "C" display
• MTS mode indication
• "MUTING," "SLEEP" or "VIDEO" display
b
• "AUTO PROGRAM," "TIMER" or "TIMER BLOCK" display
c
• Bar display for volume or picture (HUE, COLOR, BRIGHTNESS, SHARPNESS) adjustment
• Current time for TIMER/BLOCK
b
a
c
c
VIDEO L(MONO)-AUDIO-R
CAMCORDER/VIDEO IN
The CAMCORDER/ VIDEO IN jacks have a cover attached. Pull the cover open to reveal the input jacks.
If the cover comes off, reattach it by inserting the center tab into the opening below the jacks, twisting as you insert. Making sure that the two side tabs fit inside the jack area, push to close the cover.
CAMCORDER/VIDEO IN jacks
Remote control detector
STEREO lamp
TIMER lamp
POWER button
CHANNEL +/– buttons
VOLUME +/– buttons
TV/VIDEO button

Rear



Remote Commander RM-783



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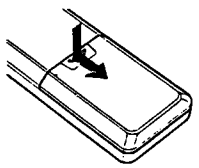
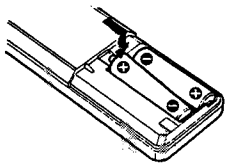
* The same function buttons are also located on the TV.

Battery installation

1 Open the lid.



2 Insert two size AA (R6) batteries in correct polarity.

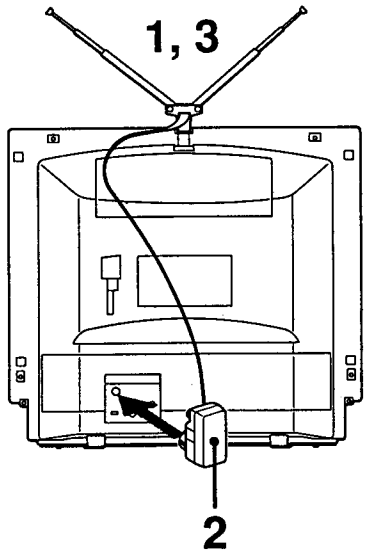


- With normal operation, batteries will last up to half a year. If the Commander does not operate properly, the batteries might be exhausted. Replace them with new ones.
- To avoid damage from possible battery leakage, remove the batteries when not using the Commander for an extended period.
- If a Remote Commander that is not recommended is used to operate this TV, or if the supplied Remote Commander is used to operate another TV, the TV may not operate properly.

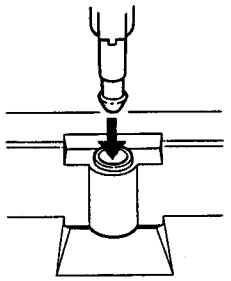
1-2. CONNECTING TV ANTENNA/CABLE

Indoor Antenna Adjustment

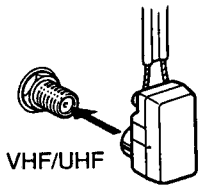
For VHF/UHF reception
Use the supplied telescopic dipole antenna.



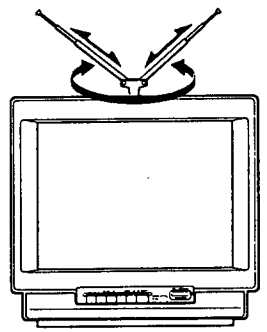
1 Insert the antenna base into the receptacle at the top of the TV.



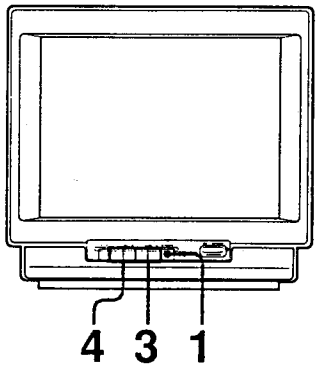
2 Attach the connector to the VHF/UHF antenna terminal at the rear of the TV.

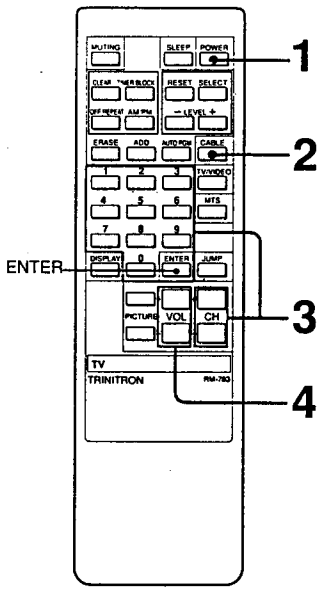


3 Adjust the length, direction and angle of the antenna ears until the picture is clear.



1-3. WACHING TV PROGRAMS





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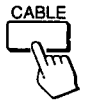
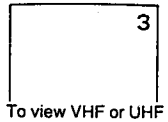
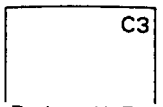
1 **Press POWER on the TV or the Remote Commander to turn the TV on.**

2 **Press CABLE so that the appropriate mode appears.**





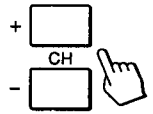
To view VHF or UHF channels



To view cable TV channels

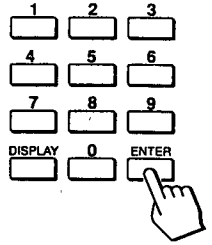
3 **Select a channel in one of the following two ways:**

To scan the preset channels* in numerical sequence, press CH +/–

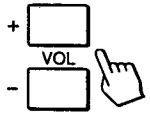


* For more on presetting channels, see p. 14-15.

To select a channel directly, press the channel number button(s) and then ENTER. For example, to select channel 10, press 1, 0 and ENTER.

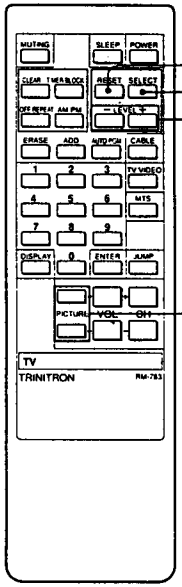


4 **Press VOL + or – to adjust the volume.**



NOTE
To turn off the TV
Press POWER on the TV or the Remote Commander again.

1-4. ADJUSTING THE PICTURE



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Press SELECT repeatedly until the on-screen display of the feature you want to adjust appears, then press LEVEL +/– to adjust the feature.

HUE

Press LEVEL –. Skin tones become purplish.

Press LEVEL +. Skin tones become greenish.

COLOR

Press LEVEL – to decrease color intensity.

Press LEVEL + to increase color intensity.

BRIGHT (brightness)

Press LEVEL – to make the picture darker.

Press LEVEL + to make the picture lighter.

SHARPNESS

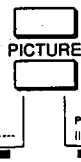
Press LEVEL – to make the picture softer.

Press LEVEL + to make the picture sharper.

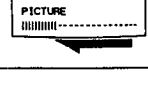
After you finish adjusting a feature, the display will disappear after a few seconds.

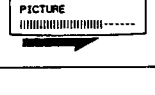
The adjustments you make will remain set even when you turn the TV off. To clear the adjustment levels and restore all the factory (mid-level) settings at once, press RESET.

To adjust picture contrast



Press PICTURE – to decrease contrast with soft color.



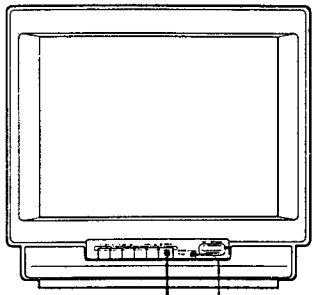


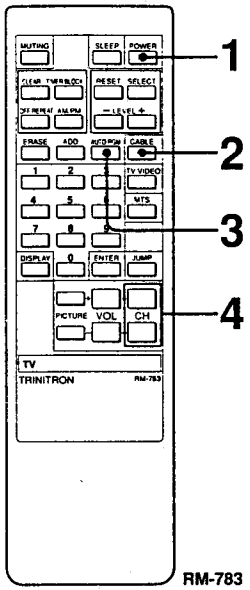
Press PICTURE + to increase contrast with vivid color.

1-5. PRESETTING TV CHANNELS

Use this feature to add channels to the channel scan memory.

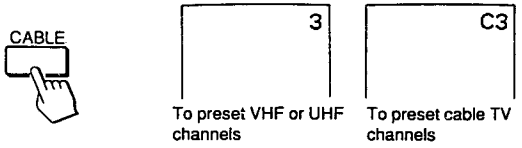
To Preset All Receivable Channels Automatically





1 **Press POWER on the TV or the Remote Commander to turn the TV on.**

2 **Press CABLE so that the appropriate mode appears.**



NOTE
If "VIDEO" is displayed on the screen
Press the TV/VIDEO button on the TV or on the Remote Commander so that a channel number appears.

3 **Press AUTO PGM.**

"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the TV's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

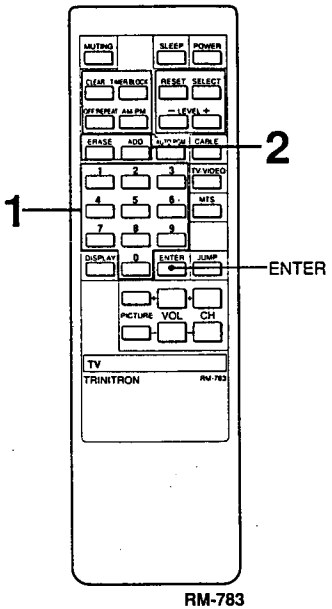
4 **To check or view preset channels**
Press CH +/–

Channels that can be received on this TV:

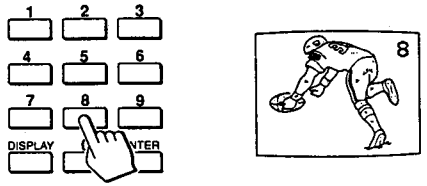
VHF: 2 - 13
UHF: 14 - 69
Cable: 1 - 125

To add channels that could not be preset automatically because their signal strength was too weak, or **to erase unnecessary channels**, follow the steps in "To preset only the desired channels" on the next page.

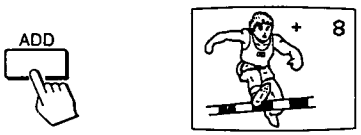
To Preset Only Desired Channels or to Erase Unnecessary Channels



1 **Press the channel number button(s) and then press ENTER to select the channel you want to add or erase.**

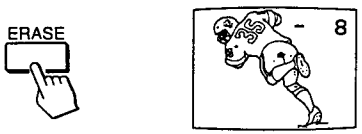


2 **To add channels – Press ADD.**



A "+" appears before the number for a moment.
This channel has now been added to the channel scan memory.

To erase channels – Press ERASE.



A "–" appears before the number for a moment.
This channel has now been erased from the channel scan memory.
The next time the CH +/– button is pressed, this channel will be skipped.

Repeat steps 1 and 2 to add or erase other channels.

CAUTION
When a VHF or UHF channel is erased
The cable TV channel with the same number is also erased, and vice versa.

Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	1	5	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corresponding CATV channel	A-8	A-7	A-6	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

31	32	33	34	35	36	37	38	39	.....	93	94	95	96	97	98	99	100	101	102	.....	123	124	125
R	S	T	U	V	W	W+1	W+2	W+3	.....	W+57	W+58	A-5	A-4	A-3	A-2	A-1	W+59	W+60	W+61	.....	W+82	W+83	W+84

Check with your local cable TV company for more complete information on the available channels.

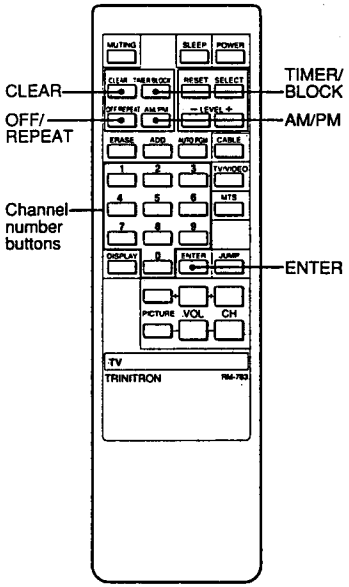
Note
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

*This designation of cable TV channels conforms to the EIA/NCTA recommendation.

Available Functions

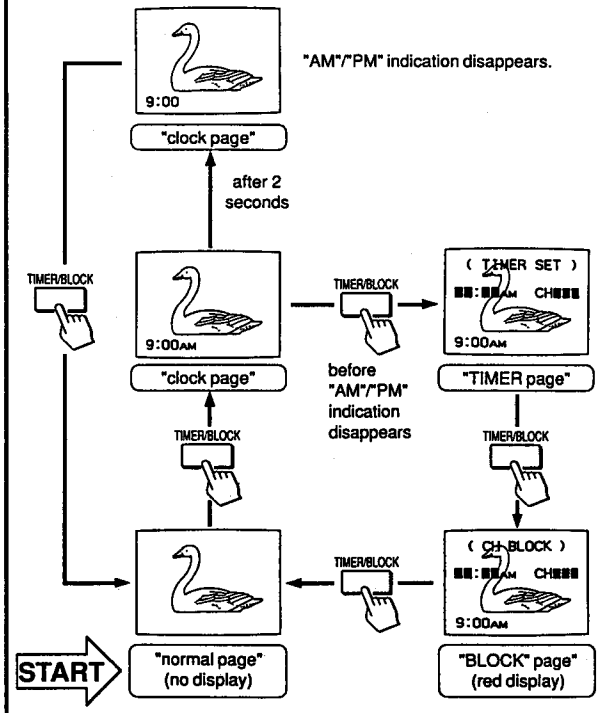
Internal clock	Once the internal clock is set, the current time will be displayed on the screen. You must set the clock correctly to activate the program start TIMER and channel BLOCK.
Program start TIMER	Makes a program of your choice appear on the screen automatically at the desired time.
Channel BLOCK	Blocks a channel from appearing on the screen for 12 hours. Use channel BLOCK to prevent children from watching undesirable programs.

The buttons used for the above functions are located on the Remote Commander.



To set the internal clock, program start TIMER and channel BLOCK, you need to go into the corresponding "pages": "clock page," "TIMER page" and "BLOCK page."

To change the "pages," press TIMER/BLOCK.



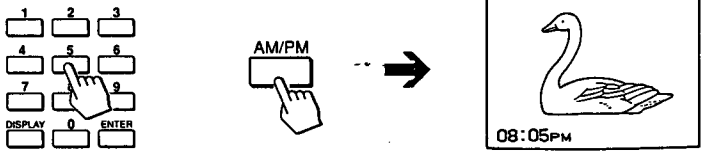
CAUTION
- All settings will be erased from the TV's memory if the TV is unplugged, or if a power failure occurs.
- The TIMER and BLOCK functions will operate only if the clock is set correctly.
- If the TIMER and BLOCK are set for overlapping times on the same channel, the blocked channel will appear on the screen at the time set on the TIMER.

Setting the Internal Clock

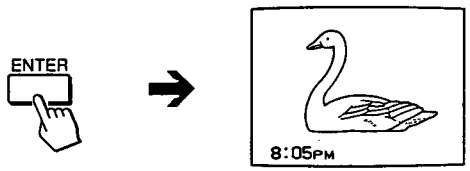
Example: To set the clock to 8:05 PM

1 From "normal page" (no display), press TIMER/BLOCK once to change to "clock page."

2 Press 0, 8, 0, 5, AM/PM. (You must press the 0's)



3 If you have performed the operation correctly, press ENTER.
The screen display will blink once, indicating that the clock has been set. (The 0 in front will disappear.)



If you make a mistake, press CLEAR and proceed from step 2.
The "AM/PM" indication will disappear after a few seconds.

To summon "TIMER page," press TIMER/BLOCK before the "AM"/"PM" indication disappears.

To return to "normal page," press TIMER/BLOCK after the "AM"/"PM" indication has disappeared.

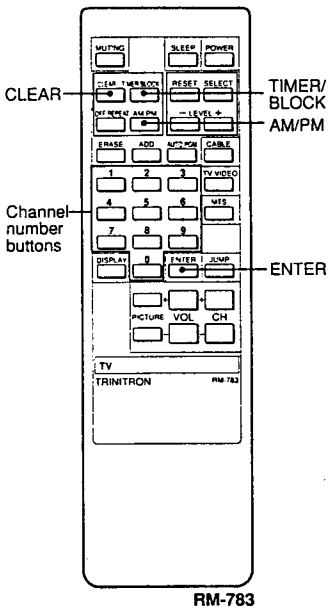
To reset the clock, summon "clock page" and press CLEAR before the "AM"/"PM" indication disappears. Then follow the steps above from step 2.

12:00 AM stands for midnight.
12:00 PM stands for noon.

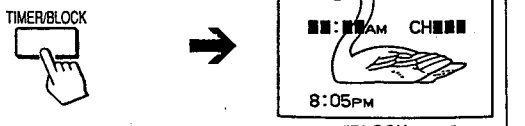
Setting Channel BLOCK

Make sure that the clock has been set correctly before setting channel BLOCK.

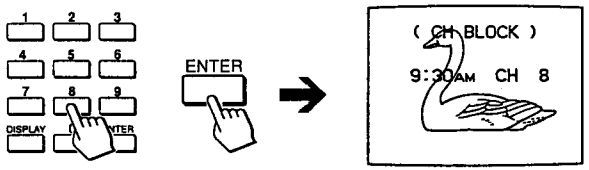
EXAMPLE: To set a BLOCK for a program which begins at 9:30 AM on channel 8



1 To change from "normal page" to "BLOCK page," press TIMER/BLOCK three times.



2 Press 0, 9, 3, 0, ENTER (you must press the 0's).
The screen display will blink once, indicating that the time has been set.
Press 8, ENTER (0 not necessary).
The numbers will blink, indicating that the channel has been set.



The display BLOCKED will appear for a few seconds, then (CH BLOCK). The Channel BLOCK has now been set.

If you make a mistake, press CLEAR and proceed from step 2.

At the preset time, the picture of the selected channel will be blocked from view and the sound will be muted.
The display "BLOCKED" will appear for a few seconds, then (CH BLOCK) which will remain on the screen during the time the channel is blocked. (Both displays in red)

Normal reception will resume automatically after 12 hours.

To restore normal reception while the channel is blocked, recall "BLOCK page" and press CLEAR.

The BLOCK setting blocks a specified channel for the same 12-hour period every day.

To clear the BLOCK setting, summon "BLOCK page" and press CLEAR.

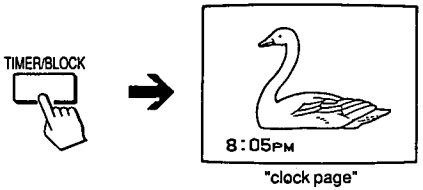
To reset, clear the setting and follow the steps above from step 2.

Setting the Program Start TIMER

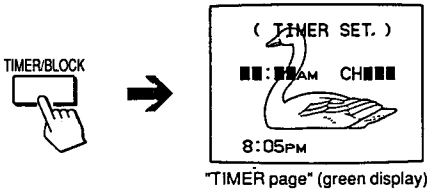
Make sure that the clock has been set correctly before setting the program start TIMER.

EXAMPLE: To set the TIMER for a program which begins at 10:30 PM on channel 12

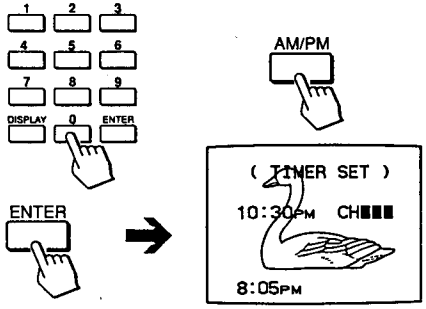
1 From "NORMAL page," (no display) press TIMER/BLOCK once to change to "clock page."



2 Press TIMER/BLOCK again before the "AM"/"PM" indication disappears to summon "TIMER page."

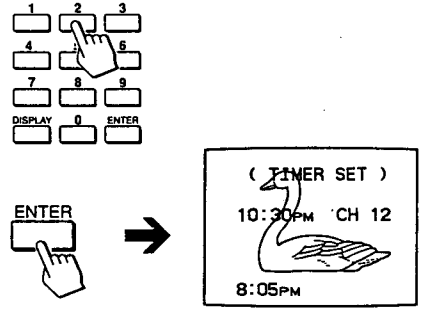


3 Press 1, 0, 3, 0, AM/PM, ENTER. The screen display will blink once, indicating that the time has been set.



The TIMER lamp will light up, indicating that the TIMER has been set.

4 Press 1, 2, ENTER (0 not necessary). The screen display will blink once, indicating that the channel has been set.



If you make a mistake, press CLEAR and proceed from step 3.

At the preset time, the selected channel will appear on the screen and the TIMER lamp will go out. The TIMER will operate whether you are watching a TV program or a VCR playback, or even if the TV is turned off.

If no button is pressed within 2 hours after the preset time, an "OFF" display will appear on the screen for 1 minute. If a button is still not touched during that minute, the TV will turn off automatically as a safety precaution.

The TIMER operates only once, but the time and the channel will remain in the TV's memory.

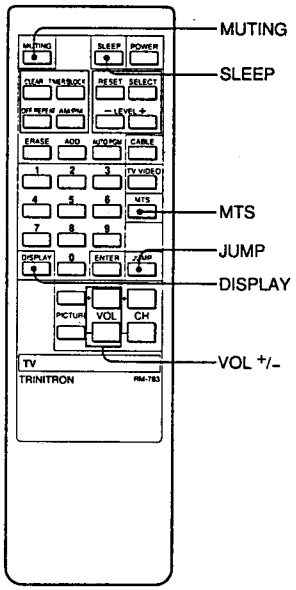
To preset the same channel at the same time for a future date, press OFF/REPEAT. The TIMER lamp will light up, indicating that the TIMER has been reactivated.

To deactivate the TIMER, press OFF/REPEAT again so that the TIMER lamp goes out. It is not necessary to summon "TIMER page" before using the OFF/REPEAT button. Furthermore, this button is effective even if the TV is turned off.

To clear the TIMER setting, summon "TIMER page" and press CLEAR.

To reset, clear the setting and follow the steps from step 3.

1-7. OTHER USEFUL FEATURES



RM-783

Muting the sound – MUTING button

1. Press MUTING.
2. The display "MUTING" will appear on the screen.
3. To restore the sound, press MUTING again, or press VOL +.

Using the SLEEP timer – SLEEP button

TO SET: (Turns TV off automatically about 1 hour after setting)
1. Press SLEEP.
2. A green "SLEEP ON" display appears for a few seconds.
3. A red "SLEEP" display will appear 1 minute before the TV shuts off.

TO CANCEL:
Press SLEEP again.
A green "SLEEP OFF" display appears for a few seconds.
OR
Turn the TV off. The sleep timer setting will be cancelled.

Receiving a Multichannel TV Sound Program — MTS button

Each time you press MTS, the MAIN, SAP (Second Audio Program) and MONO modes are selected in sequence. The display (in green) for each mode will appear on the screen for a few seconds.
(NOTE: During SAP mode, the sound of non-SAP programs will be muted.)

TO LISTEN TO STEREO SOUND:
1. Press MTS to select the MAIN mode.
2. The MAIN display will appear on screen.
3. The STEREO indicator lamp on the TV will light up whenever a stereo broadcast is received.

NOTE: A weak incoming signal may cause excessive noise with some stereo broadcasts.
Switch to MONO mode to eliminate this noise.

Switching quickly between 2 channels – JUMP button

Each time you press the JUMP button, the channel which appeared on the screen immediately before is recalled. Use this feature to keep track of two programs alternately.

Keeping the channel displayed – DISPLAY button

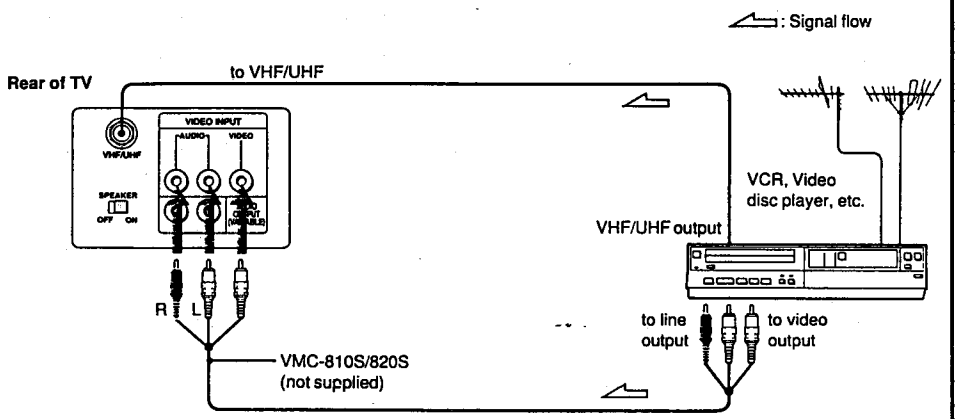
TO DISPLAY the channel:
Press DISPLAY.
The channel display will remain on the screen.

TO CANCEL the display:
Press DISPLAY again.
The channel display will disappear.

1-8. CONNECTING OPTIONAL EQUIPMENT

Connecting a VCR

After connecting, you will be able to...
• Play back video tapes • Record TV programs • Record one TV program while viewing another



To play back video tapes
1 Turn on the TV.
2 Press the TV/VIDEO button so that the "VIDEO" display appears on the screen.
3 Set the VCR in playback mode.

To return to the TV mode
Press the TV/VIDEO button until a channel number appears on the screen.

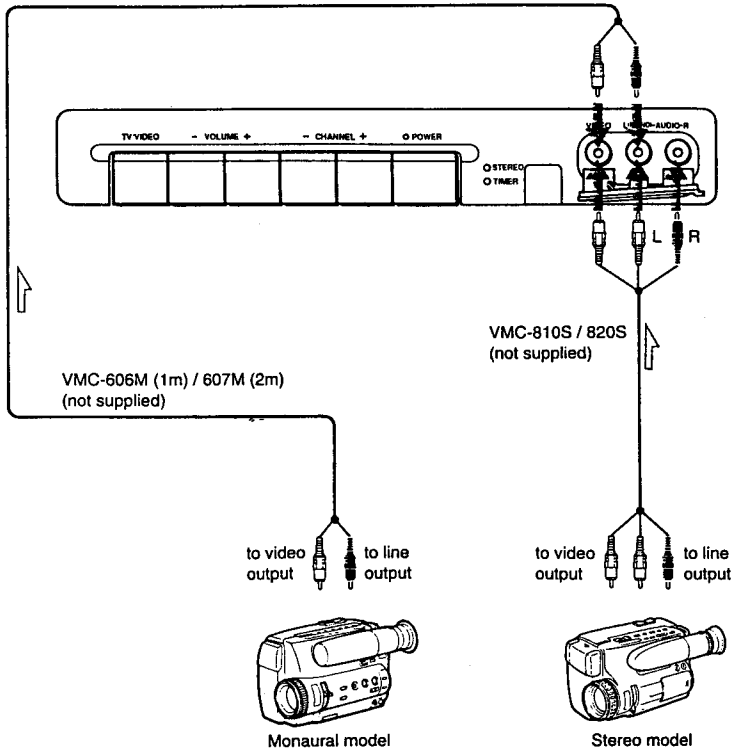
- If you connect a monaural VCR, connect the audio output of the VCR to the L jack of the TV. The monaural sound is heard from both speakers.
- For operating instructions, refer to the instruction manual furnished with the VCR.
- If the picture or sound is affected, move the VCR away from the TV.
- When the TV is in the video mode, "VIDEO" will appear on the screen, even when no signal is being received through the VIDEO INPUT jacks.

Connecting Camcorders

To play back recorded tapes

Front of TV

: Signal flow

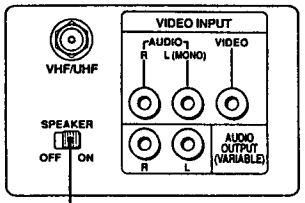


To play back the recorded tapes	When you use equipment connected to the front CAMCORDER/VIDEO IN jacks, be sure to turn off equipment that is connected to the rear VIDEO INPUT jacks. If you set them in playback mode at the same time, combined images from both will appear on the screen.

Connecting an Audio System

To listen to the TV or connected VCR sound through an audio system

Rear of TV



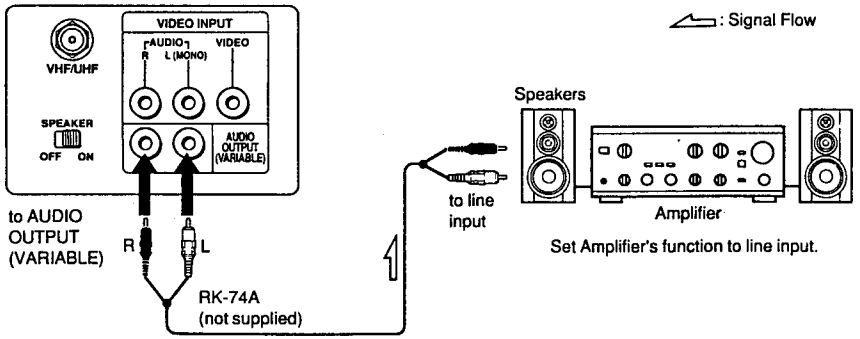
When an audio system is connected to AUDIO OUTPUT, be sure to set the SPEAKER switch at the rear of the TV to OFF. The sound from the TV's speakers will be cut off.

To adjust sound level

Leave the amplifier volume, bass and treble controls at their mid position, and adjust the level with the VOLUME +/– buttons on the TV or the VOL +/– buttons on the Commander.

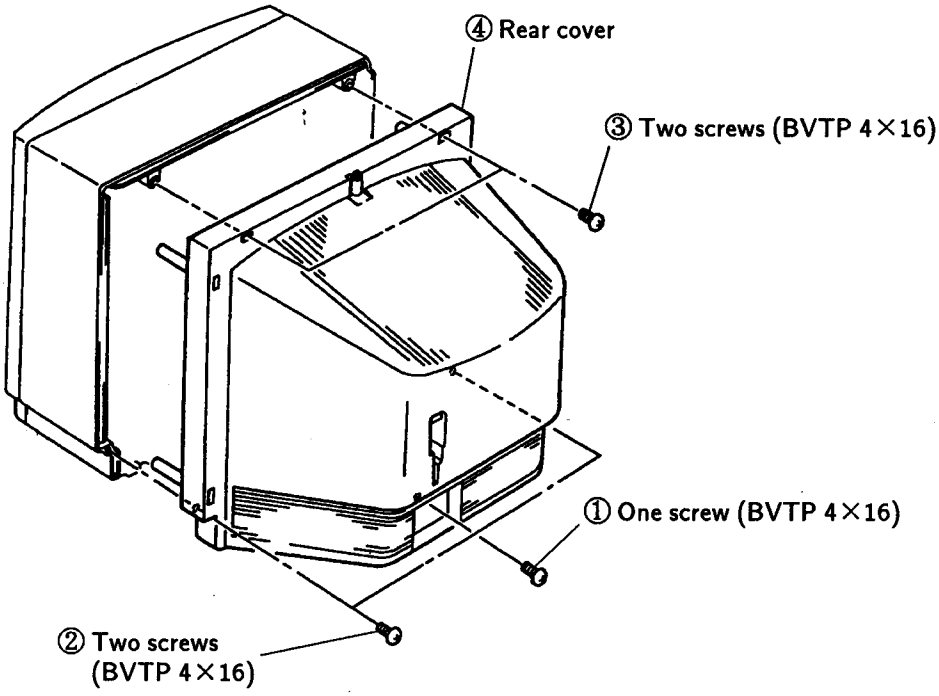
Rear of TV

: Signal Flow

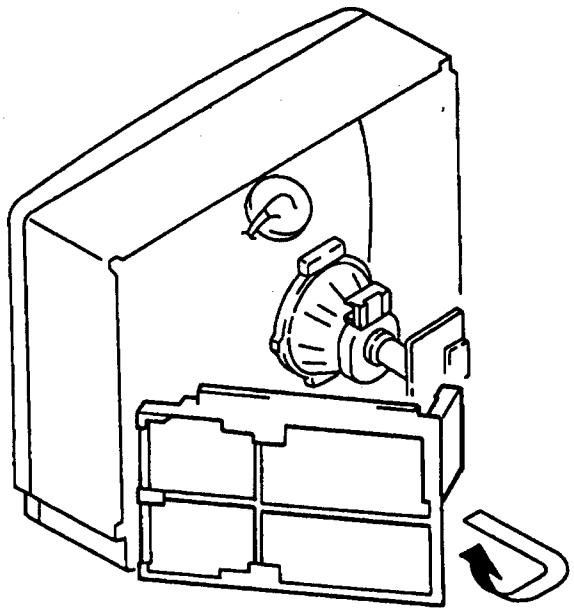


SECTION 2
DISASSEMBLY

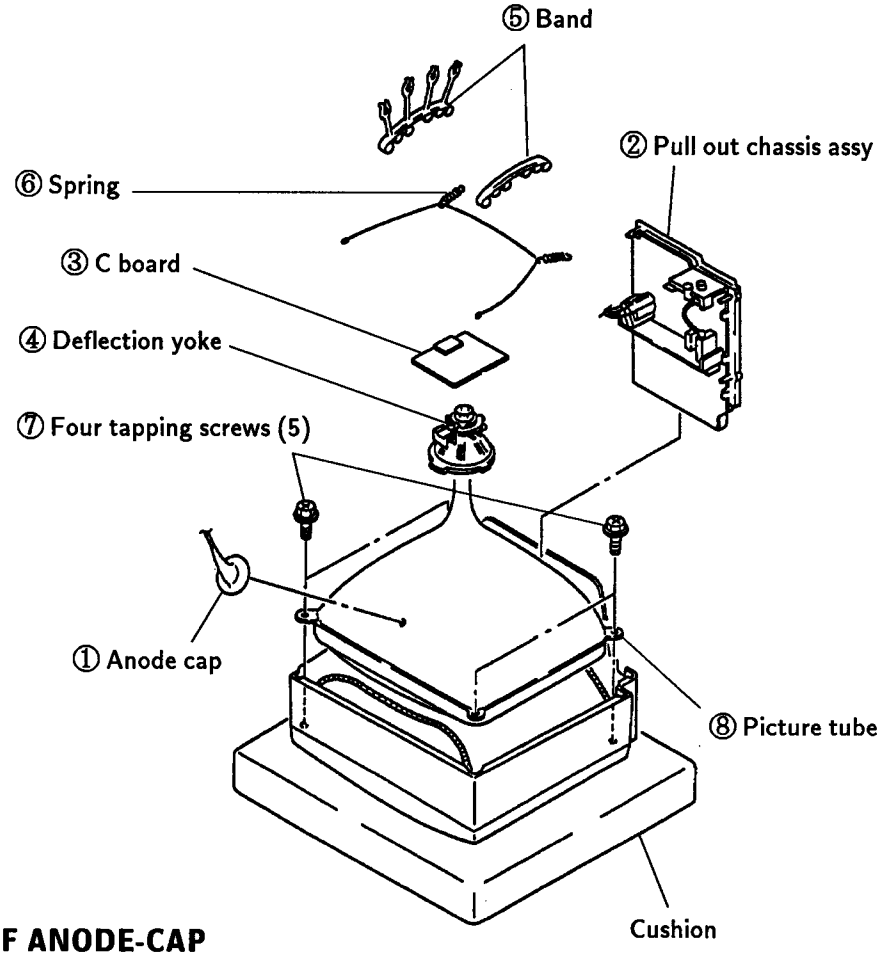
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



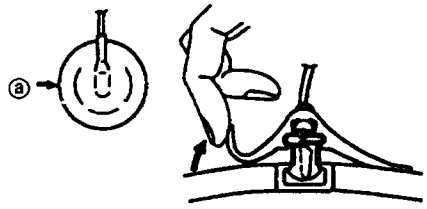
2-3. PICTURE TUBE REMOVAL



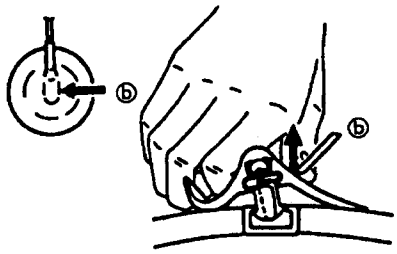
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

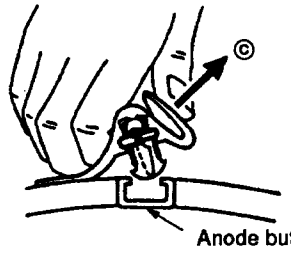
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



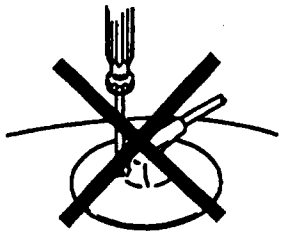
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

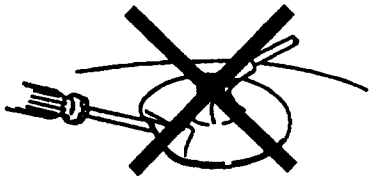
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following abjustments should be made when a complete realignment is required or a new picture tube is installed.
- These abjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows; unless otherwise noted :

PICTURE control ..... MAXIMUM
BRIGHTNESS control ..... MAXIMUM

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. Sub Brightness
5. White Balance

Note : Test Equipment Repuired.

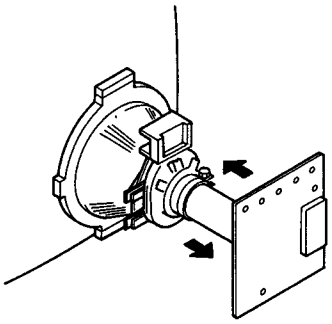
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

Preparation.

- Feed in the white pattern.
- Before starting, degauss the entire screen.

1. Loosen deflection yoke screw.
2. Adjust purity control as shown in Fig.3-1.
3. Slide deflection yoke as far forward as it will go.
4. Turn the raster signal of the pattern generator to red.
5. Adjust purity control to center vertical red band as shown in Fig.3-2.
6. Slide deflection yoke back for a uniform red screen.
7. Check green and blue rasters for uniformity by performing the same way as steps 4, 5 and 6.
8. Tighten the deflection yoke screw.
9. Check if mislanding appears at corners a—d as shown in Fig. 3-3. If mislandig is observed, correct it as shown in Fig. 3-3.
10. Confirm that beam landing is correct when the receiver is faced in all directions.



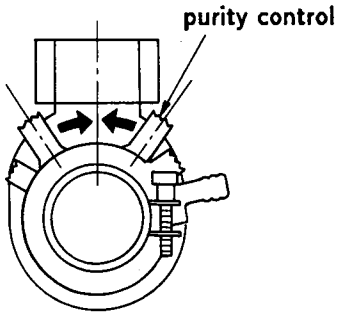


Fig. 3-1.

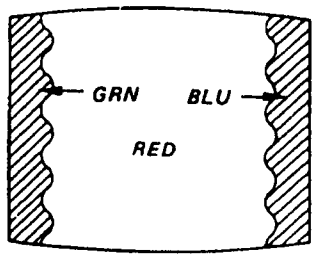


Fig. 3-2.

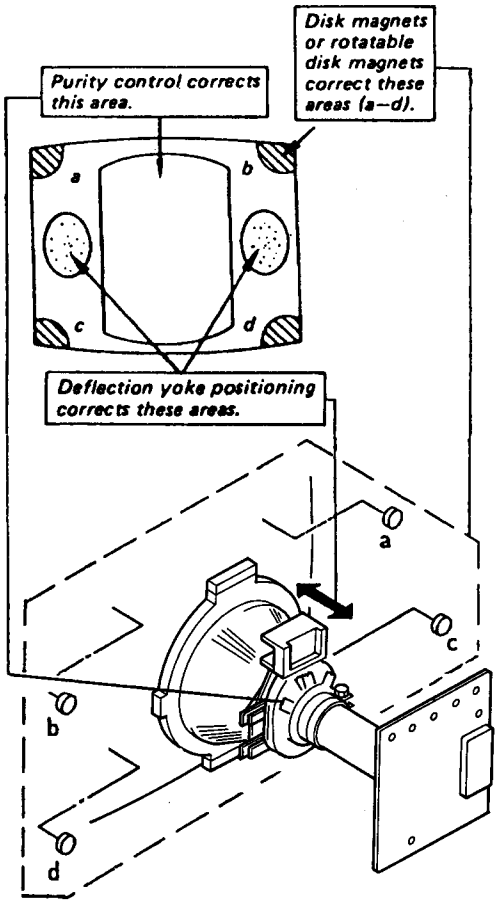


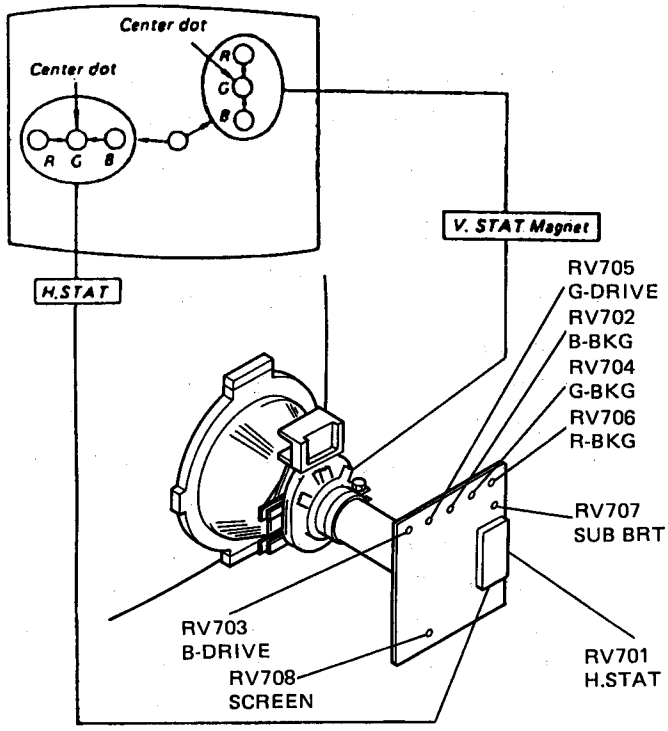
Fig. 3-3.

3-2. CONVERGENCE

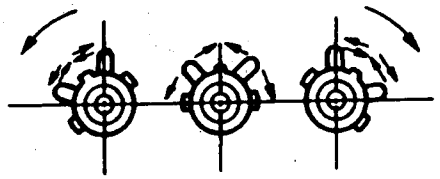
Preparation :

- Before starting, perform FOCUS, H. SIZE and V. SIZE adjustments.
- Set BRIGHTNESS control to fully counterclock - wise.
- Feed in the dot pattern.

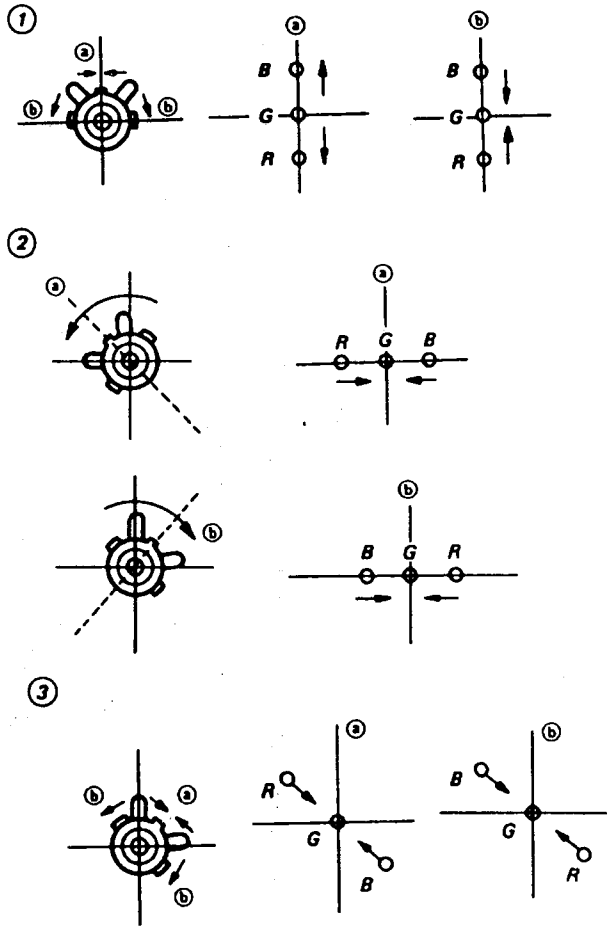
(1) Horizontal and Vertical Static Convergence



1. Adjust H. STAT VR to coincide red, green and blue dots on the center of screen.
   (Horizontal movement)
2. Adjust V. STAT magnet to coincide red, green and blue dots on the center of screen.
   (Vertical movement)
3. If the red, green and blue dots do not coincide on the center of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)
   - Tilt the V.STAT magnet and adjust static convergence to open or close the V. STAT magnet.



4. When the V.STAT magnet is moved in the direction of arrow ⓐ and ⓑ , Red, Green and Blue dots move as shown below.

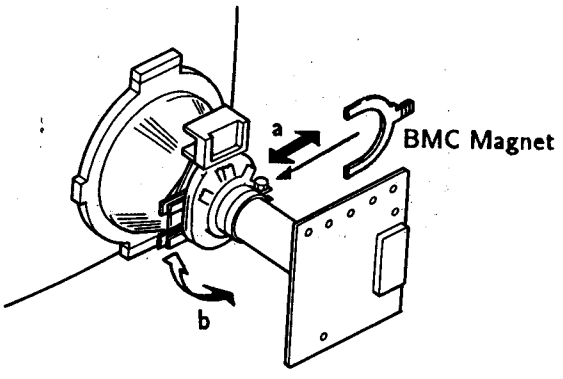


If blue dot dose not coincide with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H. static convergence.

Rotate BMC magnet (b) to correct insufficient V. static convergence.

In either case, repeat Beam Landing Adjustment.

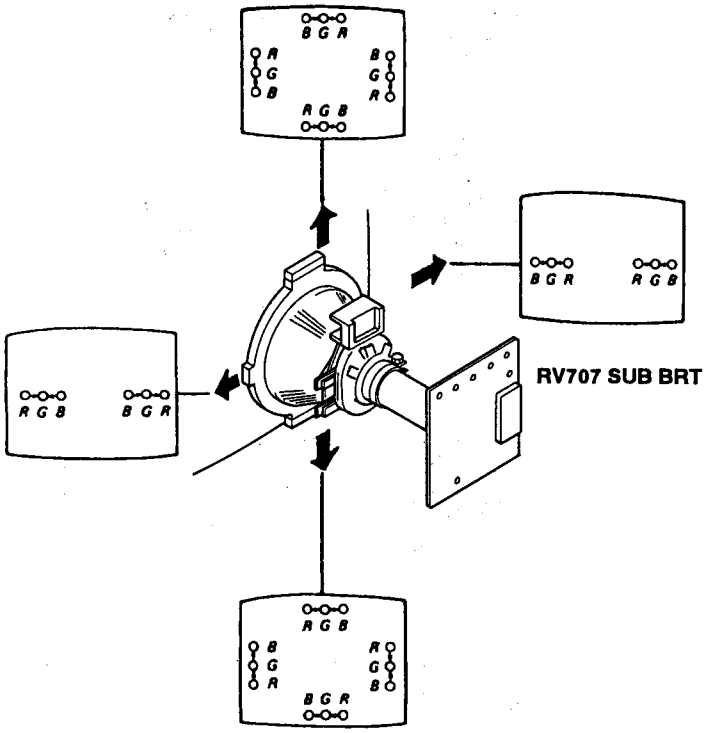


(2) Dynamic Convergence Adjustment

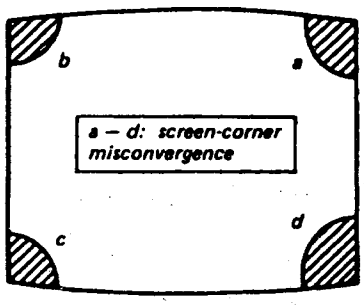
Preparation :

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

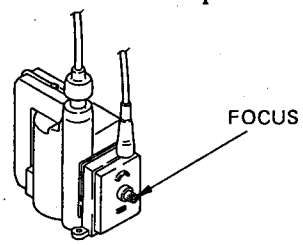


(3) Screen-corner Convergence



3-3. FOCUS (G4)

Adjust FOCUS control for a best picture.



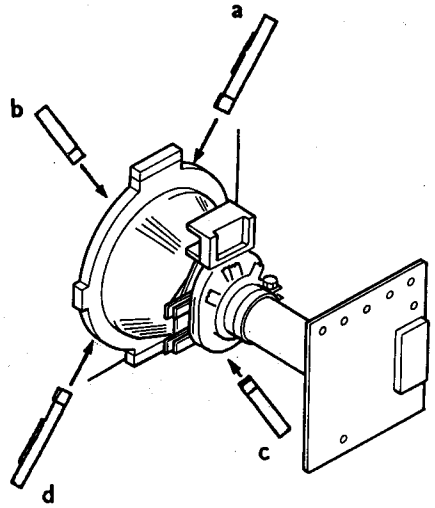
3-4. SUB BRT (RV707)

1. Feed in a cross-hatch pattern.
2. Set PICTURE and BRIGHTNESS to minimum.
3. Turn RV707 (SUB BRT) slowly to obtain a faintly visible cross-hatch.

3-5. WHITE BALANCE

Feed in the cross-hatch pattern.

1. Set BRIGHTNESS and PICTURE controls to minimum.
2. Turn RV703 (B.DRIVE) and RV705 (G. DRIVE) fully counterclockwise.
3. Set RV706 (R.BKG), RV704 (G.BKG), RV 702 (B.BKG) and RV707 (SUB BRT) to mechanical center.
4. Turn RV708(SCREEN) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning RV708. Do not turn a BKG control for this color.
5. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
6. Set BRIGHTNESS and PICTURE controls to maximum. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat Steps 1 through 6 several times.



Permalloy

SECTION 4
SAFTY RELATED ADJUSTMENTS

R324 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC601, IC301, PM501, D501, D321, C565, C563, R565, R512, R325, R324, T504 , DY

1. Preparation before confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and set the PICTURE and BRIGHT controls to maximum.
   2) Confirm that voltage of the check terminal of pin ④ of A-14 (A BOARD) is more than 110.0V DC when the set is operating normally with 120.0± 2.0V AC supply.

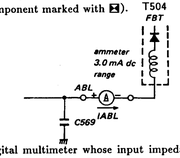
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1430 ±50 μA with PICTURE and BRIGHT etc controls.
   2) Apply DC voltage to the check terminal of pin ④ of A-14 (A BOARD) via 1T40 from the DC stabilized power source.
      Confirm that the minimum voltage is less than 129.0V DC whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 140 ±50 μA with PICTURE and BRIGHT etc controls.
   4) Apply DC voltage to the check terminal of pin ④ of A-14 (A BOARD) via 1T40 from the DC stabilized power source.
      Confirm that the minimum voltage is less than 129.0 V DC whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.

3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R324 (a component marked with ◪).

R322 CONFIRMATION METHOD (+B HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC301, PM501, D501, R565, R512, R322

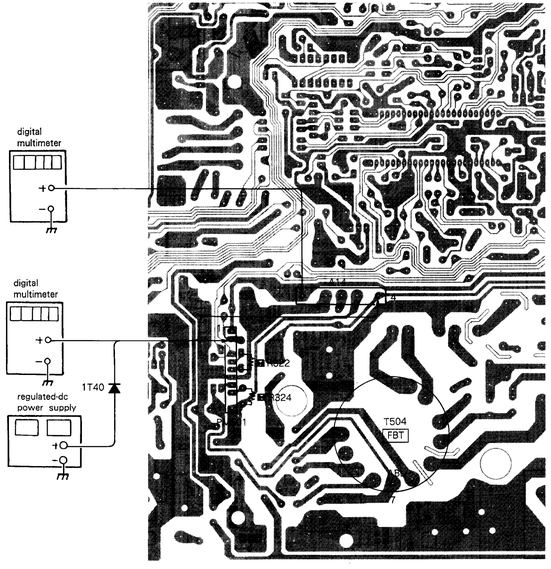
1. Preparation before confirmation
   1) Supply 120±2.0V AC to with variable auto-transformer.
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1430 ±50 μA with PICTURE and BRIGHT etc controls.
   2) Apply DC voltage to the check terminal of pin ② of PM501 (A BOARD) via 1T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 155.5 V DC whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 140 ±50 μA with PICTURE and BRIGHT etc controls.
   4) Apply DC voltage to the check terminal of pin ② of PM501 (A BOARD) via 1T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 155.5 V DC whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R322 (a component marked with ◪).



*Use a digital multimeter whose input impedance is over 100MΩ when confirming the voltage of the protector terminal.

+B VOLTAGE CONFIRMATION

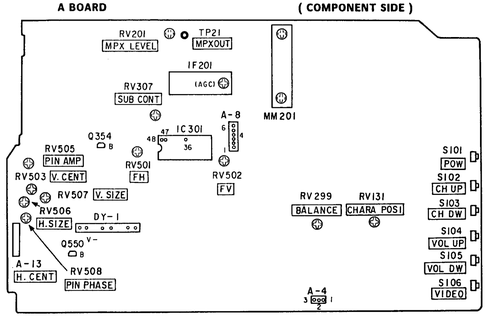
The following adjustments should always be performed when replacing IC601.
1) Supply 130$^{+2.0}_{-0}$V AC to with variable auto-transformer.
2) Receive entirely monoscope signal.
3) Set the PICTURE control and the BRIGHT controls in to initial reset.
4) Confirm the voltage of pin ① of A-14 (A BOARD) is less than 138.0V DC.
5) If step 4) is not satisfied, replace IC601 repeat above steps.



KV-20TS28 KV-20TS28
RM-783 RM-783

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. A BOARD ADJUSTMENTS



CHARA POSITION ADJUSTMENT (RV131)

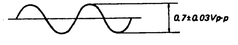
1. Receive a color-bar signal.
2. Set the PICTURE button to maximum.
3. Adjust RV131 to the point where the arrow indicate.

RF AGC ADJUSTMENT (IF201)

1. Recive an off-air signal.
2. Adjust AGC VR (AGC VR of IF201) so that snow noise and cross-modulation just disappear from the picture.

MPX LEVEL ADJUSTMENT (RV201)

1. Receive 400Hz (100% modulation) sound signal.
2. Connect an oscilloscope to TP21(MPX OUT).
3. Adjust RV201 so that the MPX level is 0.7±0.03 Vp-p.

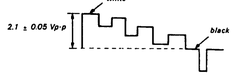


AUDIO BALANCE ADJUSTMENT (RV299)

1. Recieve monoral signal.
2. Connect the dual-trace-oscilloscope at SP out Lch (A-4 connector ①) and Rch (A-4 connector ②).
3. Adjust RV299 so that Lch and Rch are same level.

SUB CONTRAST ADJUSTMENT (RV307)

1. Receive a color-bar signal.
   PICTURE ..... MAX
   BRT ..... CENTER
   COLOR ..... MIN
2. Connect circuit between Base of Q354 and 9.0V line with a jumper wire.
3. Draw A-8 — C-3 connector (C Board).
4. Connect an oscilloscope to the pin ④ of A-8 connector (blue out).
5. Adjust RV307 (SUB CONT) so that voltage is 2.1±0.05Vp-p.

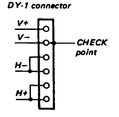


H.FREQ ADJUSTMENT (RV501)

1. Receive an off-air signal.
2. Connect circuit between pin ⑱ of IC301 (H IN) and pin ⑯ of IC301 (VCO2) with a jumper wire.
3. Connect the frequency counter across Base of Q550 and ground.
4. Adjust RV501 for 15,734kHz± 70Hz on the frequency counter.
5. Disconnect a jumper wire from IC301.

V.FREQ ADJUSTMENT (RV502)

1. Receive an off-air signal.
2. Connect circuit between pin ⑰ of IC301 (V IN) and pin ⑮ of IC301 (VCO2) with a jumper wire.
3. Connect the frequency counter across DY-1 connector (V.DY ⊖) and ground.
4. Adjust RV502 for 59.0±0.3Hz on the frequency counter.
5. Disconnect a jumper wire from IC301.



PIN AMP ADJUSTMENT (RV505)

Adjust pin amplification with RV505.

PIN PHASE ADJUSTMENT (RV508)

Adjust pin phase with RV508.

H.CENT ADJUSTMENT (A-13)

1. Receive a cross-hatch signal.
2. Set PICTURE and BRT to normal.
3. Adjust H.CENT (H.CENT TAP=A-13) for best picture.

V.CENT ADJUSTMENT (RV503)

1. Receive a cross-hatch signal.
2. Set PICTURE and BRT to normal.
3. Adjust V.CENT (RV503) for best picture.

WARNING !!

When you replace a memory IC, make sure of the functioning remote commander and proper sound with the power switch on.
If you find any troubles, take actions as shown below.

For remote commander :
Set the main power switch to OFF and press it again to turn the unit on.

For sound :
Switch the unit from MAIN to SAP to MONO mode by the MTS switch (or MTS button on the commander) to make sure of sound with MONO mode. Note that the sound is of proper volume and the speaker on/off switch is set to ON.

H.SIZE ADJUSTMENT(RV506)

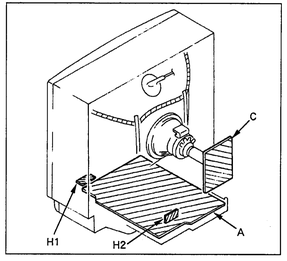
1.Receive a monoscope signal.
2.Adjust RV506 for 15.0± 0.2 divisions.

V.SIZE ADJUSTMENT(RV507)

1.Receive a monoscope signal.
2.Adjust RV507 for 11.25 ± 0.1 divisions.

SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION



6-2. PRINTED WIRING BOARDS SCHEMATIC DIAGRAMS

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

Notes:

- All capacitors are in μF unless otherwise noted. p: μμF
  50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ =1000Ω , MΩ =1000kΩ
- Indication of resistance, which does not have one for rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power: 1/4W

- : nonflamable resistor.
- : fusible resistor.
- ⚠ : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have charactristic curve B, unless otherwise noted.

- **The components indentified by ⚠ in this manual have been carefully factory-selected for each set in order to satisty regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.**
- **When replacing components indicated by ◪ mark the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⚠ and repeat the adjustment until the specified value is achieved. (Refer to R322, 324 adjustment on page 17)**
  When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◪)	Adjustment (⚠)
IC301, PM501, D501, R585, R512, R322	R322
IC601, IC301, PM501, D501, D321, C565, C563, R565, R512, R325, R324, T504, DY	R324

Reference information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NONFLAMMBLE CARBON
	FUSE	: NONFLAMMBLE FUSIBLE
	RS	: NONFLAMMBLE METAL OXIDE
	RB	: NONFLAMMBLE CEMENT
	RW	: NONFLAMMBLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

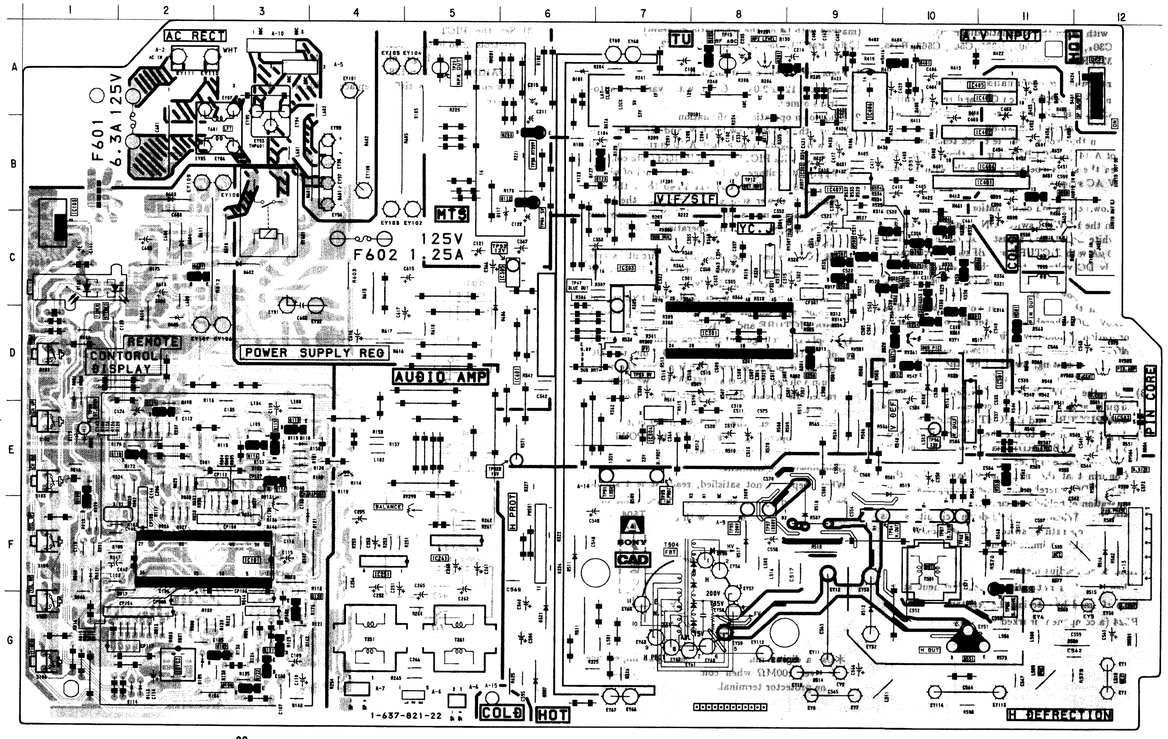
- Readings are taken with a color-bar signal input.
  MODE(AUDIO)
  - No mark : MAIN
  - ( ) : SAP
  - < > : MONO
- Readings are taken with a 10 MΩ digital maltimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be neted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : 5+ bus.
- : signal path.

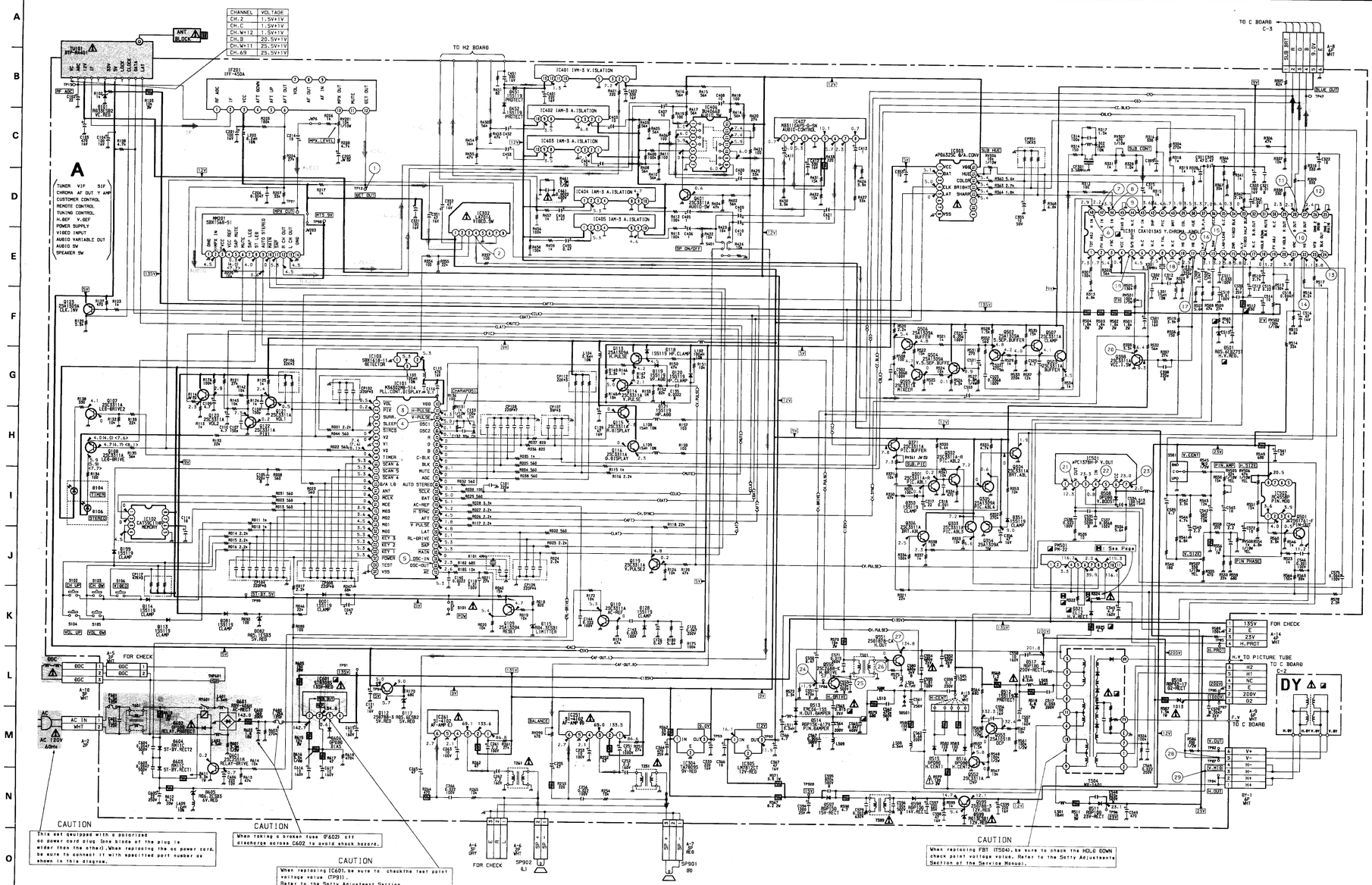
IC		Q553	E-11	RV505	D-12
IC101	F-3	Q599	B-11	RV506	E-12
IC102	G-2	Q601	C-2	RV507	E-11
IC103	C-1			RV508	E-12
IC251	F-4	DIODE			
IC261	F-5	D001	F-1	TP	
IC301	D-8	D081	D-1	TP12	B-8
IC302	B-9	D082	E-1	TP15	A-8
IC303	C-7	D101	A-6	TP21	A-5
IC304	E-7	D104	C-1	TP47	C-7
IC305	C-6	D106	C-1	TP82	F-10
IC401	B-11	D113	G-2	TP84	F-10
IC402	B-11	D114	G-2	TP85	E-7
IC403	A-11	D115	E-1	TP86	F-11
IC404	B-11	D117	B-6	TP87	F-10
IC405	A-10	D118	E-3	TP91	E-7
IC406	A-9	D119	E-3	TP92	C-6
IC407	B-9	D120	E-3	TP92B	E-6
IC501	D-10	D121	F-4	TP93	D-7
IC502	E-12	D128	E-2	TP94	B-6
IC601	D-6	D199	G-2	TP95	F-8
		D321	G-6	TP96	E-10
TRANSISTOR		D350	C-10	TP97	F-8
Q107	G-3	D351	C-10	TP98	B-6
Q108	G-3	D451	B-11	TP99	E-1
Q109	F-1	D452	B-11		
Q110	E-2	D501	D-8		
Q112	B-6	D508	D-10		
Q113	E-3	D511	F-6		
Q114	E-3	D512	F-11		
Q115	E-3	D513	G-9		
Q116	E-3	D514	G-9		
Q119	E-2	D515	F-12		
Q120	G-3	D516	F-12		
Q121	G-3	D517	F-8		
Q122	G-3	D518	F-9		
Q123	B-7	D597	G-6		
Q301	D-10	D598	C-11		
Q302	C-10	D599	B-11		
Q303	C-10	D601	B-4		
Q304	C-10	D602	C-3		
Q305	C-10	D603	B-2		
Q306	C-10	D604	C-2		
Q354	D-10	D605	D-2		
Q371	D-10	D606	D-5		
Q398	D-9				
Q401	A-10	VARIABLE RESISTOR			
Q501	D-11	RV131	F-3		
Q502	C-9	RV201	A-8		
Q503	C-9	RV299	F-5		
Q504	C-10	RV306	C-7		
Q505	C-10	RV307	C-9		
Q506	C-10	RV501	D-9		
Q507	C-9	RV502	D-7		
Q550	F-11				
Q551	G-10				
Q552	D-10				

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

A TUNER, VIF, SIF, CHROMA, AF OUT, Y AMP, COSTOMER CONTROL, REMOTE CONTROL, TUNING CONTROL, H. DEF, V. DEF, POWER SUPPLY, VIDEO INPUT, AUDIO VARIABLE OUT, AUDIO SW, SPEAKER SW

—A Board—

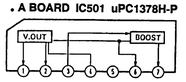



A
TUNER VIF SIF
CHROMA AF OUT Y AMP
CUSTOMER CONTROL
REMOTE CONTROL
TUNING CONTROL
H.DEF V.DEF
POWER SUPPLY
VIDEO INPUT
AUDIO VARIABLE OUT
AUDIO SW
SPEAKER 3W
CHANNEL VOLTAGE
CH.2 1.5V+1V
CH.C 1.5V+1V
CH.W+12 1.5V+1V
CH.B 20.5V+1V
CH.W+11 25.5V+1V
CH.69 25.5V+1V
TO H2 BOARD
TO C BOARD C-5
FOR CHECK
TO C BOARD C-2
DY
CAUTION
This set equipped with a polarized ac power cord plug (one blade of the plug is wider than the other).When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.
CAUTION
When taking a broken fuse (F602) off discharge across C602 to avoid shock hazards.
CAUTION
When replacing IC601, be sure to check the test point voltage value (TP91). Refer to the Safty Adjustment Section.
CAUTION
When replacing FBT (T504), be sure to check the HOLD DOWN check point voltage value. Refer to the Safty Adjustment Section of the Service Manual.

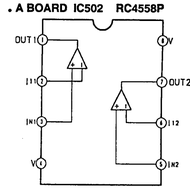
• A BOARD WAVEFORMS

① 2Vp-p (H)	② 2Vp-p (H)	③ 4.8Vp-p (H)
④ 5Vp-p (V)	⑤ 3.6 Vp-p(4MHz)	⑥ 1.6Vp-p (H)
⑦ 1.7Vp-p (V)	⑧ 1.6Vp-p (H)	⑨ 1Vp-p (H)
⑩ 5.2Vp-p (H)	⑪ 4.8Vp-p (H)	⑫ 5Vp-p (H)
⑬ 2Vp-p (V)	⑭ 2.2Vp-p (V)	⑮ 0.9Vp-p (H)
⑯ 3.2Vp-p (H)	⑰ 5.6Vp-p (H)	⑱ 0.3Vp-p(3.58MHz)
⑲ 4.4Vp-p (H)	⑳ 10Vp-p (H)	㉑ 49Vp-p (V)
㉒ 1.8Vp-p (V)	㉓ 3.3Vp-p (V)	㉔ 4.8Vp-p (H)
㉕ 110Vp-p (H)	㉖ 14Vp-p (H)	㉗ 860Vp-p (H)
㉘ 6.3Vp-p (V)	㉙ 180Vp-p (H)	

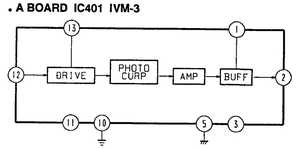
• A BOARD IC501 uPC1378H-P



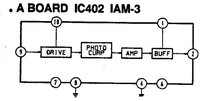
• A BOARD IC502 RC4558P



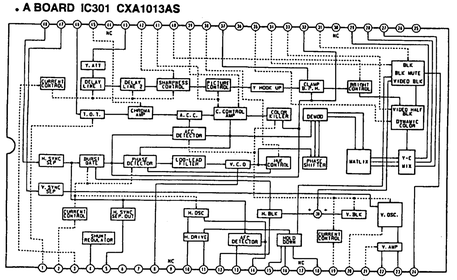
• A BOARD IC401 IVM-3

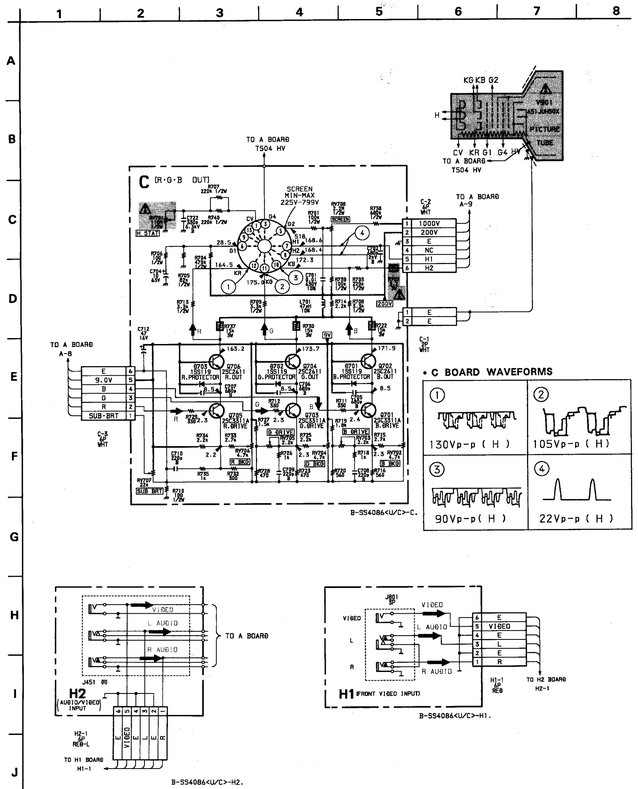


• A BOARD IC402 IAM-3



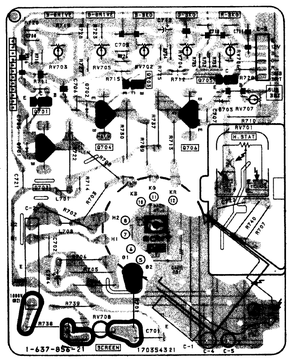
• A BOARD IC301 CXA1013AS



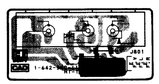


C [R. G. B OUT] H1 [FRONT VIDEO INPUT] H2 [AUDIO/VIDEO INPUT]

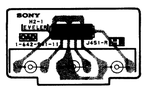
—C Board—



—H1 Board—



—H2 Board—



6-3. SEMICONDUCTORS

BU4066B
MC14066BCP

LM7812CT
TA7809S

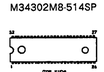
μ PD6325C

2SD1878-CA

RD13ES-B1
RD33ES-B2
RD4.3ES-B1
RD5.1ES-B3
RD5.6ES-B2
RD6.2ES-B2
RD6.2ES-B3
WG713A
1SS119

CAT59C11HP
RC4558P

M34302M8-514SP



2SA1091-O
2SC2551-O

2SD788-5

RM11C

CX20061
LA7016
MB3110APS-G-SNY

SI-4102

2SA1175-HFE
2SC2785-HFE
2SC3311A-R

EGP20G
EL1Z
RGP02-17
RGP15K-6179

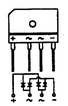
RU-3AM

CXA1013AS

STR3035

2SC2611
2SC2688

RBV-406H-01



IAM-3

SBX1618-11

U05G

IVM-3

μ PC1378H-P

2SD1408-Y

SECTION 7
EXPLODED VIEWS

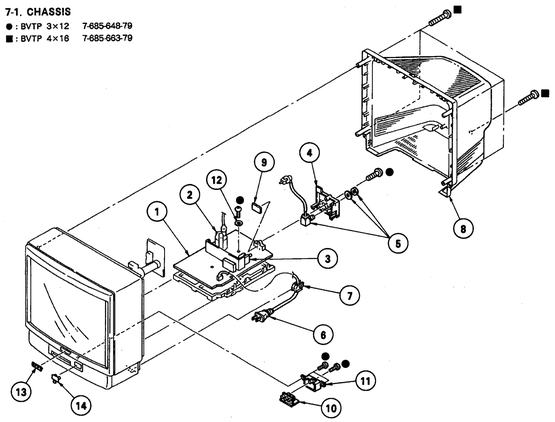
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ※ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

7-1. CHASSIS

● : BVTP 3×12 7-685-648-79
■ : BVTP 4×16 7-685-663-79

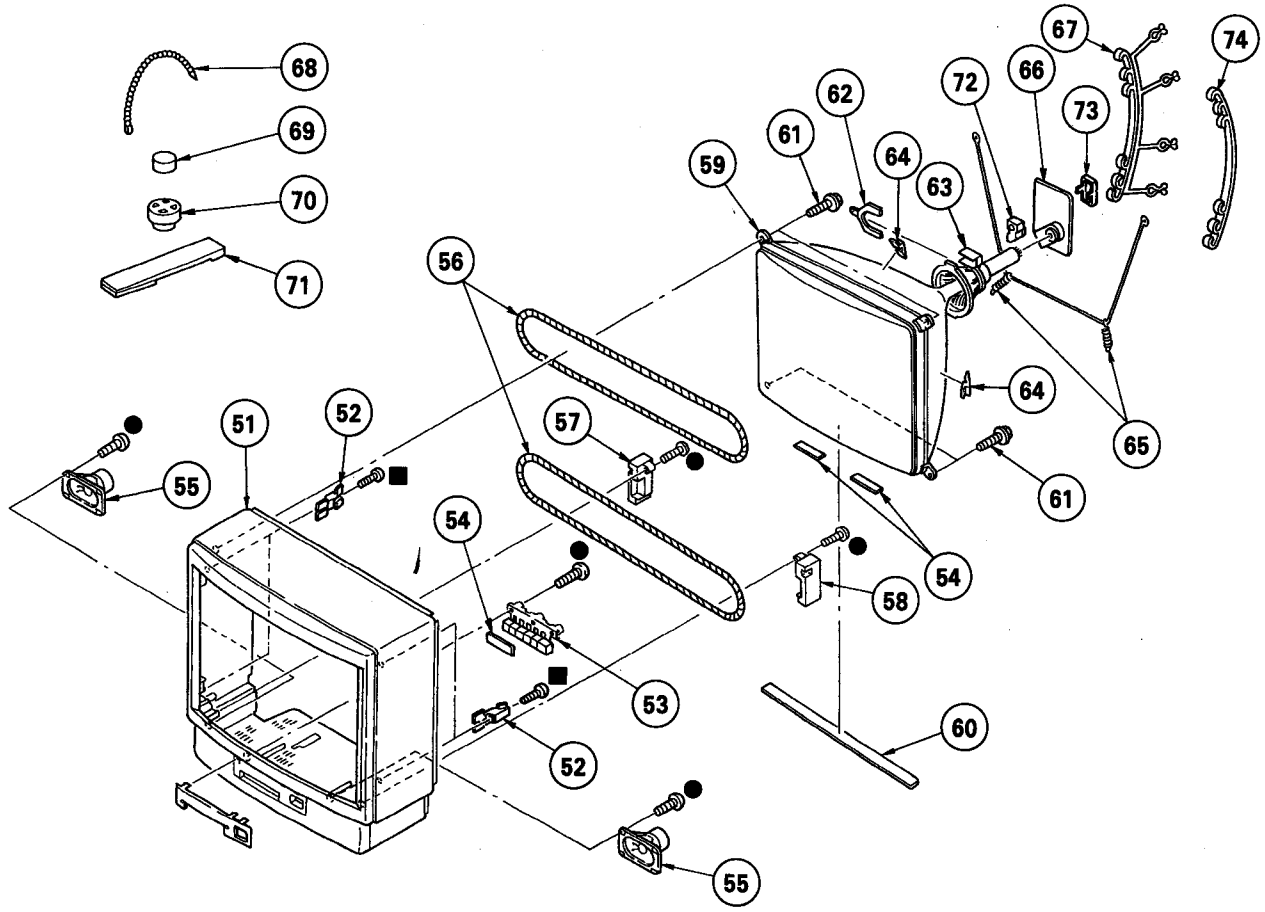


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	*A-1296-939-A	A BOARD, COMPLETE	9
2	A-1296-941-A	CRT SOCKET ASSY, FLYBACK (KX-1604)	
3	A-1296-940-A	TERMINAL BOARD ASSY	
4	X-4029-627-1	TERMINAL BOARD ASSY, ANTENNA	
5	A-1296-938-A	CRT SOCKET ASSY	
6	A-1296-942-A	SPEAKER BLOCK (SP UNIT)	
7	A-1296-943-A	SPEAKER BLOCK (SP UNIT)	
8	A-1296-944-A	CRT SOCKET ASSY (KX-1604HG)	

REF.NO.	PART NO.	DESCRIPTION	REMARK
9	4-031-087-11	COVER, REAR	
10	*1-642-941-11	H2 BOARD	
11	*1-642-940-11	H1 BOARD	
12	4-035-196-01	HOLDER, JACK	
13	4-308-030-00	WASHER	
14	4-394-072-01	EMBLEM (NO.8), SONY	
	4-035-200-01	CAP, CONTROL PANEL	

7-2. PICTURE TUBE

● : BVTP 3×12 7-685-648-79
■ : BVTP 4×16 7-685-663-79



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4030-259-1	CABINET SUB ASSY (WITH BEZEL SUB ASSY)	
52	*4-035-197-01	HOLDER, DGC	
53	X-4029-436-1	BUTTON ASSY, MULTI	
54	4-031-698-01	SHEET, ADHESIVE	
55	1-544-283-11	SPEAKER	
56	⚠1-426-358-11	COIL, DEMAGNETIZATION	
57	4-031-079-01	SUPPORT (LEFT), PICTURE TUBE	
58	4-031-078-01	SUPPORT (RIGHT), PICTURE TUBE	
59	⚠8-738-752-05	PICTURE TUBE (A51JUH50X)	
60	4-385-725-01	SHEET, BLOTTING	
61	4-365-808-01	SCREW (5), TAPPING	
62	1-452-277-00	MAGNET, BMC	
63	⚠1-451-268-11	DEFLECTION YOKE (Y21PXA)	
64	3-704-495-01	SPACER, DY	
65	*4-375-394-01	SPRING, TENSION	
66	*A-1331-126-A	C BOARD, COMPLETE	
67	*4-341-778-01	BAND, DEGAUSSING COIL	
68	4-308-870-00	CLIP, LEAD WIRE	
69	1-452-032-00	MAGNET, DISK; 10MM ϕ	
70	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	
71	X-4308-815-0	PERMALLOY ASSY, CONVERGENCE	
72	*4-379-167-01	COVER (MAIN), CV	
73	*4-379-160-01	COVER (REAR LID), CV	
74	*4-369-319-00	BAND, COIL	

SECTION 8
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1296-939-A	A BOARD, COMPLETE **********	
	1-533-223-11	CLIP, FUSE	
	*1-559-991-21	CONNECTOR ASSY 1P	
	*4-341-751-01	EYELET (EY1,EY2,EY5~EY12,EY85~EY88,EY93~EY99,EY113,EY114)	
	*4-341-752-01	EYELET (EY50~EY53,EY55~EY63,EY65~EY69,EY91,EY92,EY100~EY112)	
	*4-363-404-00	HOLDER, IC	
	4-369-267-01	SPACER, MICA	
		<CONNECTOR>	
A2	*1-580-843-11	PIN, CONNECTOR (POWER)	
A4	*1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	
A5	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
A6	*1-564-505-11	PLUG, CONNECTOR 2P	
A7	*1-564-506-11	PLUG, CONNECTOR 3P	
A8	*1-564-509-11	PLUG, CONNECTOR 6P	
A9	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
A10	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
A13	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
A14	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P	
DY1	*1-580-798-11	CONNECTOR PIN (DY) 6P	
		<CAPACITOR>	
C047	1-124-927-11	ELECT 4.7MF 20% 50V	
C101	1-164-077-11	CERAMIC 220PF 10% 50V	
C102	1-126-233-11	ELECT 22MF 20% 50V	
C103	1-126-103-11	ELECT 470MF 20% 16V	
C104	1-126-101-11	ELECT 100MF 20% 16V	
C105	1-164-077-11	CERAMIC 220PF 10% 50V	
C107	1-101-361-00	CERAMIC 150PF 5% 50V	
C108	1-101-361-00	CERAMIC 150PF 5% 50V	
C109	1-124-927-11	ELECT 4.7MF 20% 50V	
C110	1-124-927-11	ELECT 4.7MF 20% 50V	
C114	1-124-907-11	ELECT 10MF 20% 50V	
C115	1-126-103-11	ELECT 470MF 20% 16V	
C116	1-136-165-00	FILM 0.1MF 5% 50V	
C118	1-106-367-00	MYLAR 0.01MF 10% 100V	
C120	1-106-383-00	MYLAR 0.047MF 200V	
C121	1-124-477-11	ELECT 47MF 20% 16V	
C126	1-124-902-00	ELECT 0.47MF 20% 50V	
C132	1-164-033-11	CERAMIC 39PF 5% 50V	
C133	1-102-973-00	CERAMIC 100PF 5% 50V	
C135	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C139	1-124-477-11	ELECT 47MF 20% 16V	
C140	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C143	1-106-379-12	MYLAR 0.033MF 10% 100V	
C144	1-106-375-12	MYLAR 0.022MF 10% 100V	
C201	1-126-101-11	ELECT 100MF 20% 16V	
C206	1-102-125-00	CERAMIC 0.0047MF 10% 50V	
C214	1-124-907-11	ELECT 10MF 20% 50V	
C251	1-124-925-11	ELECT 2.2MF 20% 100V	
C252	1-124-799-11	ELECT 2.2MF 20% 160V	
C253	1-124-667-11	ELECT 10MF 20% 100V	
C255	1-124-910-11	ELECT 47MF 20% 50V	
C256	1-106-375-12	MYLAR 0.022MF 10% 100V	
C261	1-124-925-11	ELECT 2.2MF 20% 100V	
C262	1-124-799-11	ELECT 2.2MF 20% 160V	
C263	1-124-667-11	ELECT 10MF 20% 100V	
C265	1-124-910-11	ELECT 47MF 20% 50V	
C266	1-106-375-12	MYLAR 0.022MF 10% 100V	
C301	1-124-902-00	ELECT 0.47MF 20% 50V	
C302	1-164-056-11	CERAMIC 27PF 5% 50V	
C303	1-126-101-11	ELECT 100MF 20% 16V	
C305	1-124-902-00	ELECT 0.47MF 20% 50V	
C309	1-124-903-11	ELECT 1MF 20% 50V	
C312	1-164-050-11	CERAMIC 15PF 5% 50V	
C314	1-164-070-11	CERAMIC 100PF 5% 50V	
C315	1-124-907-11	ELECT 10MF 20% 50V	
C317	1-126-233-11	ELECT 22MF 20% 50V	
C318	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C321	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C322	1-124-907-11	ELECT 10MF 20% 50V	
C330	1-124-120-11	ELECT 220MF 20% 16V	
C331	1-126-101-11	ELECT 100MF 20% 16V	
C340	1-123-932-00	ELECT 4.7MF 20% 160V	
C342	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C351	1-124-477-11	ELECT 47MF 20% 16V	
C352	1-124-477-11	ELECT 47MF 20% 16V	
C353	1-124-907-11	ELECT 10MF 20% 50V	
C355	1-124-907-11	ELECT 10MF 20% 50V	
C356	1-124-477-11	ELECT 47MF 20% 16V	
C364	1-124-480-11	ELECT 470MF 20% 25V	
C366	1-124-907-11	ELECT 10MF 20% 50V	
C367	1-124-477-11	ELECT 47MF 20% 16V	
C398	1-164-077-11	CERAMIC 220PF 10% 50V	
C401	1-124-120-11	ELECT 220MF 20% 16V	
C402	1-124-119-00	ELECT 330MF 20% 16V	
C403	1-124-907-11	ELECT 10MF 20% 50V	
C404	1-124-907-11	ELECT 10MF 20% 50V	
C405	1-124-903-11	ELECT 1MF 20% 50V	
C406	1-124-903-11	ELECT 1MF 20% 50V	
C407	1-124-907-11	ELECT 10MF 20% 50V	
C408	1-124-907-11	ELECT 10MF 20% 50V	
C409	1-124-907-11	ELECT 10MF 20% 50V	
C410	1-124-907-11	ELECT 10MF 20% 50V	
C411	1-124-903-11	ELECT 1MF 20% 50V	
C412	1-124-119-00	ELECT 330MF 20% 16V	
C413	1-124-903-11	ELECT 1MF 20% 50V	

A

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C420	1-124-907-11	ELECT	10MF	20%	50V
C421	1-124-907-11	ELECT	10MF	20%	50V
C451	1-124-119-00	ELECT	330MF	20%	16V
C452	1-124-903-11	ELECT	1MF	20%	50V
C453	1-124-903-11	ELECT	1MF	20%	50V
C454	1-124-902-00	ELECT	0.47MF	20%	50V
C455	1-124-902-00	ELECT	0.47MF	20%	50V
C461 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C501	1-126-101-11	ELECT	100MF	20%	16V
C502	1-106-363-00	MYLAR	0.0068MF	10%	100V
C503	1-124-903-11	ELECT	1MF	20%	50V
C505	1-106-363-00	MYLAR	0.0068MF	10%	100V
C507	1-164-077-11	CERAMIC	220PF	10%	50V
C508	1-101-006-00	CERAMIC	0.047MF		50V
C509	1-101-006-00	CERAMIC	0.047MF		50V
C510	1-106-367-00	MYLAR	0.01MF	10%	100V
C511	1-106-379-12	MYLAR	0.033MF	10%	100V
C512	1-124-925-11	ELECT	2.2MF	20%	50V
C513	1-124-903-11	ELECT	1MF	20%	50V
C514	1-124-907-11	ELECT	10MF	20%	50V
C515	1-124-464-11	ELECT	0.22MF	20%	50V
C516	1-124-477-11	ELECT	47MF	20%	16V
C517 ⚠	1-108-427-91	MYLAR	0.033MF	10%	200V
C518	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C520	1-106-385-00	MYLAR	0.056MF	10%	100V
C521	1-124-903-11	ELECT	1MF	20%	50V
C522	1-102-824-00	CERAMIC	470PF	5%	50V
C523	1-124-927-11	ELECT	4.7MF	20%	50V
C530	1-124-277-11	ELECT	4.7MF	20%	25V
C534	1-124-122-11	ELECT	100MF	20%	35V
C535	1-102-030-00	CERAMIC	330PF	10%	500V
C537	1-106-363-00	MYLAR	0.0068MF	10%	100V
C538	1-106-375-12	MYLAR	0.022MF	10%	100V
C539	1-124-927-11	ELECT	4.7MF	20%	50V
C540	1-124-925-11	ELECT	2.2MF	20%	50V
C541	1-124-910-11	ELECT	47MF	20%	50V
C542	1-123-587-00	ELECT	560MF	10%	25V
C543	1-124-907-11	ELECT	10MF	20%	50V
C544	1-124-925-11	ELECT	2.2MF	20%	50V
C546	1-106-343-00	MYLAR	0.001MF	10%	100V
C548 ⚠	1-102-212-91	CERAMIC	820PF	10%	500V
C549	1-124-913-11	ELECT	470MF	20%	50V
C550	1-124-902-00	ELECT	0.47MF	20%	50V
C551	1-164-081-11	CERAMIC	470PF	10%	50V
C552 ⚠	1-162-115-91	CERAMIC	330PF	10%	2KV
C553	1-102-228-00	CERAMIC	470PF	10%	500V
C554 ⚠	1-162-116-91	CERAMIC	680PF	10%	2KV
C555 ⚠	1-108-377-91	MYLAR	0.01MF	10%	100V
C556	1-126-101-11	ELECT	100MF	20%	16V
C557	1-123-024-21	ELECT	33MF		160V
C558	1-124-046-00	ELECT	10MF	20%	160V
C559	1-106-391-12	MYLAR	0.1MF	10%	200V
C560	1-136-109-00	FILM	0.68MF	5%	200V
C561	1-124-634-11	ELECT	1MF	20%	250V
C562 ⚠	1-102-228-91	CERAMIC	470PF	10%	500V
C563 ⚠	1-137-231-11	FILM	0.015MF	3%	2KV
C564 ⚠	1-136-111-11	FILM	1MF	5%	200V
C565 ⚠	1-136-313-51	FILM	0.047MF	5%	400V
C566	1-126-163-11	ELECT	4.7MF	20%	50V
C567 ⚠	1-162-318-91	CERAMIC	0.001MF	10%	500V
C569	1-106-375-12	MYLAR	0.022MF		200V
C570	1-162-114-00	CERAMIC	0.0047MF		2KV
C571	1-106-371-00	MYLAR	0.015MF		200V
C572	1-124-907-11	ELECT	10MF	20%	50V
C575	1-106-359-00	MYLAR	0.0047MF	10%	100V
C579	1-129-898-00	FILM	0.0022MF	5%	630V
C580 ⚠	1-162-116-91	CERAMIC	680PF	10%	2KV
C594	1-124-557-11	ELECT	1000MF	20%	25V
C595	1-102-212-00	CERAMIC	820PF	10%	500V
C596	1-162-117-00	CERAMIC	100PF	10%	500V
C597	1-124-484-11	ELECT	220MF	20%	35V
C598	1-124-477-11	ELECT	47MF	20%	16V
C599	1-124-120-11	ELECT	220MF	20%	16V
C601 ⚠	1-108-745-52	MYLAR	0.22MF	20%	125V
C602 ⚠	1-125-679-31	ELECT	560MF	20%	200V
C603	1-161-830-00	CERAMIC	0.0047MF		500V
C604	1-161-830-00	CERAMIC	0.0047MF		500V
C605	1-123-948-00	ELECT	22MF	20%	250V
C606	1-126-176-11	ELECT	220MF	20%	10V
C615	1-124-046-00	ELECT	10MF	20%	160V
C616	1-124-046-00	ELECT	10MF	20%	160V
C617	1-124-046-00	ELECT	10MF	20%	160V

<FILTER>

CF301	1-409-344-00	CERAMIC TRAP 3.58MHZ

<COMPOSITION CIRCUIT BLOCK>

CP008	1-233-147-11	COMPOSITION CIRCUIT BLOCK
CP102	1-233-145-11	COMPOSITION CIRCUIT BLOCK
CP104	1-233-147-11	COMPOSITION CIRCUIT BLOCK
CP106	1-236-357-11	NETWORK, RES
CP107	1-233-146-11	COMPOSITION CIRCUIT BLOCK
CP108	1-233-118-11	COMPOSITION CIRCUIT BLOCK
CP109	1-233-117-11	COMPOSITION CIRCUIT BLOCK
CP112	1-236-490-11	NETWORK, RES, THICK FILM
CP117	1-236-078-11	NETWORK, RES, THICK FILM
CP351	1-236-253-11	NETWORK, RES, THICK FILM

<DIODE>

D001	8-719-911-19	DIODE 1SS119
D081	8-719-911-19	DIODE 1SS119
D082	8-719-109-86	DIODE RD5.1ES-B3
D101	8-719-110-78	DIODE RD33BS-B2
D104	1-809-401-11	LED UNIT
D106	1-809-401-11	LED UNIT
D113	8-719-911-19	DIODE 1SS119
D114	8-719-911-19	DIODE 1SS119
D115	8-719-109-74	DIODE RD4.3ES-B1
D117	8-719-109-89	DIODE RD5.6ES-B2
D118	8-719-911-19	DIODE 1SS119
D119	8-719-911-19	DIODE 1SS119
D120	8-719-911-19	DIODE 1SS119
D121	8-719-911-19	DIODE 1SS119
D128	8-719-911-19	DIODE 1SS119
D199	8-719-911-19	DIODE 1SS119
D321	8-719-302-43	DIODE EL1Z
D350	8-719-911-19	DIODE 1SS119
D351	8-719-911-19	DIODE 1SS119
D451	8-719-911-19	DIODE 1SS119
D452	8-719-911-19	DIODE 1SS119
D501	8-719-109-89	DIODE RD5.6ES-B2
D508	8-719-911-55	DIODE UO5G
D511 ⚠	8-719-961-03	DIODE RGP10G
D512 ⚠	8-719-911-19	DIODE 1SS119

A

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D513	8-719-945-80	DIODE ERC06-15S	
D514	8-719-988-55	DIODE RGP15K-6179	
D515	8-719-911-55	DIODE U05G	
D516	8-719-911-55	DIODE U05G	
D517	8-719-300-33	DIODE RU-3AM	
D518 ⚠	8-719-976-64	DIODE RGP02-17	
D597	8-719-979-85	DIODE EGP20G	
D598	8-719-300-33	DIODE RU-3AM	
D599 ⚠	8-719-110-35	DIODE RD13BS-B1	
D601 ⚠	8-719-305-07	DIODE RBV-406H	
D602 ⚠	8-719-908-03	DIODE GP08D	
D603	8-719-304-63	DIODE RM11C	
D604	8-719-304-63	DIODE RM11C	
D605	8-719-109-93	DIODE RD6.2ES-B3	
D606	8-719-911-55	DIODE U05G	
		<FUSE>	
F601 ⚠	1-532-748-11	FUSE, GLASS TUBE 6.3A/125V	
F602 ⚠	1-532-741-11	FUSE, GLASS TUBE 1.25A/125V	
		<IC>	
IC101	8-759-636-45	IC M34302M8-514SP	
IC102	8-759-748-69	IC CAT59C11HP	
IC103	8-741-618-11	IC SBX1618-11	
IC251 ⚠	8-749-900-15	IC SI-4102	
IC261 ⚠	8-749-900-15	IC SI-4102	
IC301	8-752-031-72	IC CXA1013AS	
IC302 ⚠	8-759-800-81	IC LA7016	
IC303 ⚠	8-759-104-05	IC UPD6325C	
IC304	8-759-231-56	IC TA7809S	
IC305	8-759-929-62	IC LM7812CT	
IC401	1-809-366-11	INSULATING MODULE, VIDEO IVM-3	
IC402	1-809-365-11	INSULATING MODULE, AUDIO IAM-3	
IC403	1-809-365-11	INSULATING MODULE, AUDIO IAM-3	
IC404	1-809-365-11	INSULATING MODULE, AUDIO IAM-3	
IC405	1-809-365-11	INSULATING MODULE, AUDIO IAM-3	
IC406	8-759-932-33	IC BU4066B	
IC407	8-759-983-38	IC MB3110APS-G-SNY	
IC501	8-759-105-82	IC UPC1378H-P	
IC502	8-759-945-58	IC RC4558P	
IC601 ⚠	8-749-930-35	IC STR3035	
MM201	8-741-156-80	IC SBX1568-51	
		<IF BLOCK>	
IF201	1-464-756-21	IF BLOCK (IFF-450A)	
		<COIL>	
L102	1-408-421-00	INDUCTOR 100UH	
L103	1-408-421-00	INDUCTOR 100UH	
L104	1-408-404-00	INDUCTOR 3.9UH	
L108	1-408-411-00	INDUCTOR 15UH	
L109	1-408-411-00	INDUCTOR 15UH	
L203	1-408-408-00	INDUCTOR 8.2UH	
L301	1-408-411-00	INDUCTOR 15UH	
L302	1-408-412-00	INDUCTOR 18UH	
L501 ⚠	1-410-666-41	INDUCTOR 18UH	
L503 ⚠	1-410-669-41	INDUCTOR 33UH	
L505	1-459-104-00	COIL, DUST CORE	
L506	1-407-365-00	COIL,CHOKE	
L508	1-412-553-11	INDUCTOR 3.3MMH	
L509 ⚠	1-459-390-31	COIL (WITH CORE)	
L510 ⚠	1-459-626-12	HLC	
L511	1-459-075-00	COIL,DYNAMIC CONVERSION CHOKE	
L513	1-410-665-31	INDUCTOR 15UH	
L516 ⚠	1-412-524-21	INDUCTOR 8.2UH	
L601 ⚠	1-412-519-21	INDUCTOR 3.3UH	
L602 ⚠	1-412-519-21	INDUCTOR 3.3UH	
L609	1-408-398-00	INDUCTOR 1.2UH	
		<MODULE>	
PM501	1-809-335-11	MODULE, PROTECTOR PM-22	
		<TRANSISTOR>	
Q107	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q108	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q109	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q110	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q112	8-729-378-84	TRANSISTOR 2SD788-5	
Q113	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q114	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q115	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q116	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q119	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q120	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q121	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q122	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q123	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q302	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q303	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q305	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q306	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q354	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q371	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q398	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q501	8-729-202-03	TRANSISTOR 2SD1408-Y	
Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q504	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q505	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q550	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q551	8-729-821-87	TRANSISTOR 2SD1878-CA	
Q552	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q553	8-729-200-17	TRANSISTOR 2SA1091-O	
Q599	8-729-378-84	TRANSISTOR 2SD788-5	
Q601	8-729-255-12	TRANSISTOR 2SC2551-O	
		<RESISTOR>	
R001	1-249-421-11	CARBON 2.2K 5% 1/4W	
R002	1-249-414-11	CARBON 560 5% 1/4W	
R003	1-249-414-11	CARBON 560 5% 1/4W	
R004	1-249-414-11	CARBON 560 5% 1/4W	
R005	1-249-414-11	CARBON 560 5% 1/4W	
R008	1-249-414-11	CARBON 560 5% 1/4W	
R010	1-249-417-11	CARBON 1K 5% 1/4W	
R011	1-249-417-11	CARBON 1K 5% 1/4W	

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Replace only with part number specified.

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The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R013	1-249-414-11	CARBON	560	5%	1/4W	
R014	1-249-421-11	CARBON	2.2K	5%	1/4W	
R015	1-249-421-11	CARBON	2.2K	5%	1/4W	
R016	1-249-421-11	CARBON	2.2K	5%	1/4W	
R017	1-249-421-11	CARBON	2.2K	5%	1/4W	
R018	1-249-416-11	CARBON	820	5%	1/4W	
R019	1-249-429-11	CARBON	10K	5%	1/4W	
R020	1-249-429-11	CARBON	10K	5%	1/4W	
R021	1-249-434-11	CARBON	27K	5%	1/4W	
R022	1-249-414-11	CARBON	560	5%	1/4W	
R023	1-249-414-11	CARBON	560	5%	1/4W	
R024	1-249-421-11	CARBON	2.2K	5%	1/4W	
R025	1-249-421-11	CARBON	2.2K	5%	1/4W	
R026	1-249-421-11	CARBON	2.2K	5%	1/4W	
R027	1-249-421-11	CARBON	2.2K	5%	1/4W	
R028	1-249-423-11	CARBON	3.3K	5%	1/4W	
R029	1-249-414-11	CARBON	560	5%	1/4W	
R030	1-249-405-11	CARBON	100	5%	1/4W	
R031	1-249-414-11	CARBON	560	5%	1/4W	
R032	1-249-414-11	CARBON	560	5%	1/4W	
R035	1-249-417-11	CARBON	1K	5%	1/4W	
R036	1-249-416-11	CARBON	820	5%	1/4W	
R037	1-249-416-11	CARBON	820	5%	1/4W	
R038	1-249-414-11	CARBON	560	5%	1/4W	
R040	1-249-431-11	CARBON	15K	5%	1/4W	
R044	1-249-414-11	CARBON	560	5%	1/4W	
R046	1-249-433-11	CARBON	22K	5%	1/4W	
R047	1-249-439-11	CARBON	68K	5%	1/4W	
R089	1-249-405-11	CARBON	100	5%	1/4W	
R090	1-249-405-11	CARBON	100	5%	1/4W	
R102	1-249-417-11	CARBON	1K	5%	1/4W	
R103	1-215-923-00	METAL OXIDE	10K	5%	3W	F
R108	1-249-425-11	CARBON	4.7K	5%	1/4W	
R113	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-249-417-11	CARBON	1K	5%	1/4W	
R116	1-249-421-11	CARBON	2.2K	5%	1/4W	
R117	1-249-421-11	CARBON	2.2K	5%	1/4W	
R118	1-249-433-11	CARBON	22K	5%	1/4W	
R120	1-249-437-11	CARBON	47K	5%	1/4W	
R121	1-249-434-11	CARBON	27K	5%	1/4W	
R123	1-249-417-11	CARBON	1K	5%	1/4W	
R124	1-249-417-11	CARBON	1K	5%	1/4W	
R125	1-249-417-11	CARBON	1K	5%	1/4W	
R126	1-249-429-11	CARBON	10K	5%	1/4W	
R127	1-249-413-11	CARBON	470	5%	1/4W	
R129	1-249-423-11	CARBON	3.3K	5%	1/4W	
R132	1-249-429-11	CARBON	10K	5%	1/4W	
R133	1-249-433-11	CARBON	22K	5%	1/4W	
R134	1-249-405-11	CARBON	100	5%	1/4W	
R135	1-249-438-11	CARBON	56K	5%	1/4W	
R136	1-249-405-11	CARBON	100	5%	1/4W	
R138	1-249-411-11	CARBON	330	5%	1/4W	
R139	1-249-433-11	CARBON	22K	5%	1/4W	
R142	1-249-429-11	CARBON	10K	5%	1/4W	
R143	1-249-429-11	CARBON	10K	5%	1/4W	
R146	1-249-417-11	CARBON	1K	5%	1/4W	
R147	1-249-428-11	CARBON	8.2K	5%	1/4W	
R148	1-249-432-11	CARBON	18K	5%	1/4W	
R149	1-249-423-11	CARBON	3.3K	5%	1/4W	
R150	1-249-437-11	CARBON	47K	5%	1/4W	
R151	1-249-429-11	CARBON	10K	5%	1/4W	
R152	1-249-440-11	CARBON	82K	5%	1/4W	
R153	1-247-903-00	CARBON	1M	5%	1/4W	
R157	1-249-405-11	CARBON	100	5%	1/4W	
R159	1-249-405-11	CARBON	100	5%	1/4W	
R170	1-249-415-11	CARBON	680	5%	1/4W	
R172	1-249-429-11	CARBON	10K	5%	1/4W	
R174	1-249-437-11	CARBON	47K	5%	1/4W	
R175	1-249-441-11	CARBON	100K	5%	1/4W	
R176	1-249-441-11	CARBON	100K	5%	1/4W	
R180	1-249-426-11	CARBON	5.6K	5%	1/4W	
R182	1-249-415-11	CARBON	680	5%	1/4W	
R185	1-249-429-11	CARBON	10K	5%	1/4W	
R203	1-247-885-00	CARBON	180K	5%	1/4W	
R204	1-249-434-11	CARBON	27K	5%	1/4W	
R206	1-249-417-11	CARBON	1K	5%	1/4W	
R207	1-249-435-11	CARBON	33K	5%	1/4W	
R208	1-249-425-11	CARBON	4.7K	5%	1/4W	
R217	1-249-417-11	CARBON	1K	5%	1/4W	
R229	1-249-429-11	CARBON	10K	5%	1/4W	
R251	1-249-434-11	CARBON	27K	5%	1/4W	
R252 ⚠	1-249-401-91	CARBON	47	5%	1/4W	F
R253	1-249-409-11	CARBON	220	5%	1/4W	F
R254	1-249-429-11	CARBON	10K	5%	1/4W	
R261	1-249-434-11	CARBON	27K	5%	1/4W	
R262 ⚠	1-249-401-91	CARBON	47	5%	1/4W	F
R264	1-249-413-11	CARBON	470	5%	1/4W	F
R265	1-249-429-11	CARBON	10K	5%	1/4W	
R301	1-215-472-00	METAL	130K	1%	1/4W	
R302	1-249-438-11	CARBON	56K	5%	1/4W	
R304	1-247-889-00	CARBON	270K	5%	1/4W	
R305	1-249-440-11	CARBON	82K	5%	1/4W	
R306	1-249-437-11	CARBON	47K	5%	1/4W	
R307	1-249-429-11	CARBON	10K	5%	1/4W	
R308	1-249-411-11	CARBON	330	5%	1/4W	
R309	1-249-411-11	CARBON	330	5%	1/4W	
R310	1-249-411-11	CARBON	330	5%	1/4W	
R312	1-249-405-11	CARBON	100	5%	1/4W	
R313	1-249-427-11	CARBON	6.8K	5%	1/4W	
R314	1-249-407-11	CARBON	150	5%	1/4W	
R315	1-249-417-11	CARBON	1K	5%	1/4W	
R316	1-249-411-11	CARBON	330	5%	1/4W	
R317	1-249-419-11	CARBON	1.5K	5%	1/4W	
R318	1-249-417-11	CARBON	1K	5%	1/4W	
R319	1-249-417-11	CARBON	1K	5%	1/4W	
R320	1-249-417-11	CARBON	1K	5%	1/4W	
R321	1-249-433-11	CARBON	22K	5%	1/4W	
⊠R322 ⚠		CARBON			1/4W	
R323	1-249-427-11	CARBON	6.8K	5%	1/4W	
⊠R324 ⚠		CARBON			1/4W	
R325 ⚠	1-249-389-91	CARBON	4.7	5%	1/4W	F
R326	1-249-441-11	CARBON	100K	5%	1/4W	
R328	1-249-417-11	CARBON	1K	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-249-426-11	CARBON	5.6K	5%	1/4W	
R331	1-249-417-11	CARBON	1K	5%	1/4W	
R333	1-249-429-11	CARBON	10K	5%	1/4W	
R334	1-249-413-11	CARBON	470	5%	1/4W	
R335	1-249-425-11	CARBON	4.7K	5%	1/4W	
R336	1-249-441-11	CARBON	100K	5%	1/4W	
R337	1-249-417-11	CARBON	1K	5%	1/4W	
R338	1-247-903-00	CARBON	1M	5%	1/4W	
R341	1-249-417-11	CARBON	1K	5%	1/4W	
R342	1-249-421-11	CARBON	2.2K	5%	1/4W	
R350	1-249-437-11	CARBON	47K	5%	1/4W	
R352	1-247-889-00	CARBON	270K	5%	1/4W	
R353	1-249-429-11	CARBON	10K	5%	1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R354	1-249-405-11	CARBON	100	5%	1/4W	
R355	1-249-433-11	CARBON	22K	5%	1/4W	
R357	1-249-405-11	CARBON	100	5%	1/4W	
R360	1-249-426-11	CARBON	5.6K	5%	1/4W	
R361	1-249-429-11	CARBON	10K	5%	1/4W	
R362	1-215-883-11	METAL OXIDE	33	5%	2W	F
R363	1-249-422-11	CARBON	2.7K	5%	1/4W	
R364	1-249-420-11	CARBON	1.8K	5%	1/4W	
R366	1-249-430-11	CARBON	12K	5%	1/4W	
R367	1-249-436-11	CARBON	39K	5%	1/4W	
R368	1-249-427-11	CARBON	6.8K	5%	1/4W	
R371	1-249-429-11	CARBON	10K	5%	1/4W	
R397	1-249-434-11	CARBON	27K	5%	1/4W	
R398	1-249-423-11	CARBON	3.3K	5%	1/4W	
R401	1-249-409-11	CARBON	220	5%	1/4W	
R402	1-249-438-11	CARBON	56K	5%	1/4W	
R403	1-249-438-11	CARBON	56K	5%	1/4W	
R404	1-249-437-11	CARBON	47K	5%	1/4W	
R405	1-249-438-11	CARBON	56K	5%	1/4W	
R406	1-249-405-11	CARBON	100	5%	1/4W	
R408	1-249-438-11	CARBON	56K	5%	1/4W	
R409	1-249-441-11	CARBON	100K	5%	1/4W	
R410	1-249-438-11	CARBON	56K	5%	1/4W	
R411	1-249-405-11	CARBON	100	5%	1/4W	
R412	1-249-441-11	CARBON	100K	5%	1/4W	
R413	1-249-441-11	CARBON	100K	5%	1/4W	
R414	1-249-438-11	CARBON	56K	5%	1/4W	
R415	1-249-438-11	CARBON	56K	5%	1/4W	
R416	1-249-438-11	CARBON	56K	5%	1/4W	
R417	1-249-438-11	CARBON	56K	5%	1/4W	
R418	1-249-405-11	CARBON	100	5%	1/4W	
R419	1-249-405-11	CARBON	100	5%	1/4W	
R420	1-249-434-11	CARBON	27K	5%	1/4W	
R421	1-249-405-11	CARBON	100	5%	1/4W	
R422	1-249-429-11	CARBON	10K	5%	1/4W	
R423	1-249-429-11	CARBON	10K	5%	1/4W	
R424	1-249-429-11	CARBON	10K	5%	1/4W	
R426	1-249-424-11	CARBON	3.9K	5%	1/4W	
R427	1-249-435-11	CARBON	33K	5%	1/4W	
R429	1-249-435-11	CARBON	33K	5%	1/4W	
R430	1-249-424-11	CARBON	3.9K	5%	1/4W	
R431	1-249-431-11	CARBON	15K	5%	1/4W	
R432	1-249-431-11	CARBON	15K	5%	1/4W	
R433	1-249-409-11	CARBON	220	5%	1/4W	F
R450	1-249-438-11	CARBON	56K	5%	1/4W	
R451	1-249-404-00	CARBON	82	5%	1/4W	
R453	1-249-437-11	CARBON	47K	5%	1/4W	
R454	1-249-438-11	CARBON	56K	5%	1/4W	
R455	1-249-437-11	CARBON	47K	5%	1/4W	
R456	1-249-441-11	CARBON	100K	5%	1/4W	
R457	1-249-417-11	CARBON	1K	5%	1/4W	
R458	1-249-441-11	CARBON	100K	5%	1/4W	
R459	1-249-417-11	CARBON	1K	5%	1/4W	
R461 ⚠	1-202-726-91	SOLID	3.9M	10%	1/2W	
R501	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R502	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R503	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R504	1-216-458-11	METAL OXIDE	1.8K	5%	2W	F
R505	1-215-472-00	METAL	130K	1%	1/4W	
R506	1-249-407-11	CARBON	150	5%	1/4W	
R507	1-249-426-11	CARBON	5.6K	5%	1/4W	
R508	1-249-437-11	CARBON	47K	5%	1/4W	
R509	1-249-434-11	CARBON	27K	5%	1/4W	
R510	1-249-422-11	CARBON	2.7K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R511 ⚠	1-216-470-51	METAL OXIDE	18	5%	3W	F
R512	1-249-411-11	CARBON	330	5%	1/4W	F
R513	1-215-472-00	METAL	130K	1%	1/4W	
R514	1-215-457-00	METAL	33K	1%	1/4W	
R515	1-249-427-11	CARBON	6.8K	5%	1/4W	
R516	1-249-428-11	CARBON	8.2K	5%	1/4W	
R517	1-249-417-11	CARBON	1K	5%	1/4W	
R518 ⚠	1-216-379-91	METAL OXIDE	6.8	5%	2W	F
R519	1-249-424-11	CARBON	3.9K	5%	1/4W	
R520	1-249-421-11	CARBON	2.2K	5%	1/4W	
R521	1-249-417-11	CARBON	1K	5%	1/4W	
R522	1-249-431-11	CARBON	15K	5%	1/4W	
R523	1-249-417-11	CARBON	1K	5%	1/4W	
R524	1-249-429-11	CARBON	10K	5%	1/4W	
R525	1-249-417-11	CARBON	1K	5%	1/4W	
R526	1-249-423-11	CARBON	3.3K	5%	1/4W	
R527	1-259-871-15	CARBON	6.8M	5%	1/4W	
R528	1-249-419-11	CARBON	1.5K	5%	1/4W	
R529	1-249-417-11	CARBON	1K	5%	1/4W	
R530	1-249-433-11	CARBON	22K	5%	1/4W	
R531	1-249-410-11	CARBON	270	5%	1/4W	
R532	1-249-438-11	CARBON	56K	5%	1/4W	
R533	1-247-887-00	CARBON	220K	5%	1/4W	
R534	1-249-417-11	CARBON	1K	5%	1/4W	
R535	1-249-431-11	CARBON	15K	5%	1/4W	
R536	1-249-426-11	CARBON	5.6K	5%	1/4W	
R537	1-249-430-11	CARBON	12K	5%	1/4W	
R538	1-249-405-11	CARBON	100	5%	1/4W	
R539	1-215-373-31	METAL	10	1%	1/4W	
R540	1-249-408-11	CARBON	180	5%	1/4W	
R541	1-249-427-11	CARBON	6.8K	5%	1/4W	
R542	1-249-423-11	CARBON	3.3K	5%	1/4W	
R543	1-249-430-11	CARBON	12K	5%	1/4W	
R544	1-249-425-11	CARBON	4.7K	5%	1/4W	
R545	1-247-239-00	CARBON	910	5%	1/2W	
R546	1-249-417-11	CARBON	1K	5%	1/4W	
R547	1-249-429-11	CARBON	10K	5%	1/4W	
R548	1-249-496-11	CARBON	100K	5%	1/2W	
R549	1-249-415-11	CARBON	680	5%	1/4W	F
R550	1-249-431-11	CARBON	15K	5%	1/4W	
R551	1-249-431-11	CARBON	15K	5%	1/4W	
R552	1-249-414-11	CARBON	560	5%	1/4W	
R554	1-249-427-11	CARBON	6.8K	5%	1/4W	
R555	1-249-413-11	CARBON	470	5%	1/4W	
R556	1-216-352-11	METAL OXIDE	1.8	5%	1W	F
R557	1-249-419-11	CARBON	1.5K	5%	1/4W	
R558	1-249-410-11	CARBON	270	5%	1/4W	
R559	1-249-415-11	CARBON	680	5%	1/4W	
R560	1-249-423-11	CARBON	3.3K	5%	1/4W	
R561	1-249-496-11	CARBON	100K	5%	1/2W	
R562	1-249-429-11	CARBON	10K	5%	1/4W	
R563	1-249-436-11	CARBON	39K	5%	1/4W	
R564	1-215-417-00	METAL	680	1%	1/4W	
R565	1-249-425-11	CARBON	4.7K	5%	1/4W	
R566	1-247-883-00	CARBON	150K	5%	1/4W	
R567	1-216-380-11	METAL OXIDE	8.2	5%	2W	F
R568 ⚠	1-216-390-51	METAL OXIDE	1.2	5%	3W	F
R569	1-214-913-00	METAL	100K	1%	1/2W	
R570	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R571	1-216-356-00	METAL OXIDE	3.9	5%	1W	F
R572	1-249-423-11	CARBON	3.3K	5%	1/4W	
R575	1-249-401-11	CARBON	47	5%	1/4W	
R577 ⚠	1-216-451-91	METAL OXIDE	120	5%	2W	F

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A H2 C

REF.NO.	PART NO.	DESCRIPTION				REMARK
R578	1-259-880-11	CARBON	2.2M	5%	1/4W	
R579 ⚠	1-249-415-91	CARBON	680	5%	1/4W	F
R580	1-215-863-11	METAL OXIDE	100	5%	1W	F
R582	1-215-863-11	METAL OXIDE	100	5%	1W	F
R583	1-215-863-11	METAL OXIDE	100	5%	1W	F
R586	1-247-746-11	CARBON	390	5%	1/2W	
R587 ⚠	1-215-870-91	METAL OXIDE	1.5K	5%	1W	F
R589	1-249-441-11	CARBON	100K	5%	1/4W	
R598	1-249-389-11	CARBON	4.7	5%	1/4W	F
R599	1-249-417-11	CARBON	1K	5%	1/4W	
R601 ⚠	1-202-726-91	SOLID	3.9M	10%	1/2W	
R602 ⚠	1-205-792-11	WIREWOUND	1.8	5%	10W	F
R603	1-247-889-00	CARBON	270K	5%	1/4W	
R605 ⚠	1-205-984-11	WIREWOUND	150	5%	20W	F
R610 ⚠	1-217-224-11	WIREWOUND	100	10%	2W	F
R611	1-215-872-11	METAL OXIDE	3.3K	5%	1W	F
R612	1-205-986-11	WIREWOUND	4.7K	5%	20W	
R613	1-249-437-11	CARBON	47K	5%	1/4W	
R614	1-249-429-11	CARBON	10K	5%	1/4W	
R615 ⚠	1-216-463-91	METAL OXIDE	12K	5%	2W	F
R616 ⚠	1-247-719-91	CARBON	3.3K	5%	1/4W	F
R617 ⚠	1-249-401-91	CARBON	47	5%	1/4W	F
R618	1-247-895-00	CARBON	470K	5%	1/4W	

<VARIABLE RESISTOR>

RV131	1-238-012-11	RES, ADJ, CARBON	1K
RV201	1-238-016-11	RES, ADJ, CARBON	10K
RV299	1-238-011-11	RES, ADJ, CARBON	470
RV306	1-238-016-11	RES, ADJ, CARBON	10K
RV307	1-238-011-11	RES, ADJ, CARBON	470
RV501	1-228-728-00	RES, ADJ, CERAMIC CARBON	100K
RV502	1-238-020-11	RES, ADJ, CARBON	100K
RV505	1-238-017-11	RES, ADJ, CARBON	22K
RV506	1-238-019-11	RES, ADJ, CARBON	47K
RV507	1-238-010-11	RES, ADJ, CARBON	330
RV508	1-238-012-11	RES, ADJ, CARBON	1K

<RELAY>

RY601 ⚠	1-515-573-13	RELAY, POWER

<SWITCH>

S101 ⚠	1-571-532-23	SWITCH, TACTIL (POWER)
S102	1-571-532-21	SWITCH, TACTIL
S103	1-571-532-21	SWITCH, TACTIL
S104	1-571-532-21	SWITCH, TACTIL
S105	1-571-532-21	SWITCH, TACTIL
S106	1-571-532-21	SWITCH, TACTIL
S401	1-554-706-11	SWITCH, SLIDE
S501	1-554-186-00	SWITCH, LEVER

<SPARK GAP>

SG501	1-519-422-11	GAP, SPARK

<TRANSFORMER>

T251 ⚠	1-427-479-11	TRANSFORMER (SOT)
T261 ⚠	1-427-479-11	TRANSFORMER (SOT)
T501	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE
T504 ⚠	1-439-416-41	TRANSFOREMR ASSY, FLYBACK (NX-1604)
T599 ⚠	1-421-857-11	TRANSFORMER, FERRITE
T601 ⚠	1-424-335-11	TRANSFORMER, LINE FILTER

<THERMISTOR>

THP601 ⚠	1-808-081-14	THERMISTOR, POSITIVE

<TUNER>

TU101 ⚠	1-465-371-11	TUNER, BT (BTP-RA401)

<CRYSTAL>

X101	1-577-082-11	VIBRATOR, CERAMIC
X301	1-567-505-11	OSCILLATOR, CRYSTAL

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*1-642-941-11	H2 BOARD	
	********	

<CONNECTOR>

H2-1	*1-564-521-11	PLUG, CONNECTOR 6P

<JACK>

J451R	1-691-904-11	JACK BLOCK, PIN 5P

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*A-1331-126-A	C BOARD, COMPLETE	
	**********	
1-540-071-11	SOCKET, PICTURE TUBE	
*4-379-160-01	COVER (REAR LID), CV	
*4-379-167-01	COVER (MAIN), CV	

<CONNECTOR>

C1	*1-506-371-00	PIN, CONNECTOR 2P
C2	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P
C3	*1-564-509-11	PLUG, CONNECTOR 6P

<CAPACITOR>

C701	1-136-601-11	FILM	0.01MF	10%	630V
C702	1-162-116-00	CERAMIC	680PF	10%	2KV
C704	1-124-915-11	ELECT	10MF	20%	63V
C705	1-102-116-00	CERAMIC	680PF	10%	50V
C706	1-102-116-00	CERAMIC	680PF	10%	50V
C707	1-102-116-00	CERAMIC	680PF	10%	50V
C708	1-102-110-00	CERAMIC	220PF	10%	50V
C709	1-102-110-00	CERAMIC	220PF	10%	50V
C710	1-102-110-00	CERAMIC	220PF	10%	50V
C712	1-124-477-11	ELECT	47MF	20%	16V
C722	1-162-622-11	CERAMIC	330PF	10%	6.3KV

<DIODE>

D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119

<COIL>

L701	1-408-417-00	INDUCTOR	47UH

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REF.NO.	PART NO.	DESCRIPTION				REMARK
		<TRANSISTOR>				
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q702	8-729-326-11	TRANSISTOR 2SC2611				
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q704	8-729-326-11	TRANSISTOR 2SC2611				
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q706	8-729-326-11	TRANSISTOR 2SC2611				
		<RESISTOR>				
R701	1-202-838-00	SOLID	100K	10%	1/2W	
R702 ⚠	1-216-393-51	METAL OXIDE	2.2	5%	3W	F
R703	1-202-842-11	SOLID	220K	20%	1/2W	
R704	1-202-846-00	SOLID	470K	20%	1/2W	
R705	1-202-837-00	SOLID	82K	20%	1/2W	
R706	1-202-549-81	SOLID	100	20%	1/2W	
R707	1-202-842-11	SOLID	220K	20%	1/2W	
R708	1-202-824-00	SOLID	3.3K	20%	1/2W	
R709	1-202-824-00	SOLID	3.3K	20%	1/2W	
R710	1-202-549-81	SOLID	100	20%	1/2W	
R711	1-249-411-11	CARBON	330	5%	1/4W	
R712	1-249-411-11	CARBON	330	5%	1/4W	
R713	1-202-824-00	SOLID	3.3K	20%	1/2W	
R714	1-249-421-11	CARBON	2.2K	5%	1/4W	
R715	1-249-422-11	CARBON	2.7K	5%	1/4W	
R716	1-249-414-11	CARBON	560	5%	1/4W	
R718	1-249-417-11	CARBON	1K	5%	1/4W	
R719	1-249-420-11	CARBON	1.8K	5%	1/4W	
R720	1-249-414-11	CARBON	560	5%	1/4W	
R722	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R723	1-249-413-11	CARBON	470	5%	1/4W	
R725	1-249-421-11	CARBON	2.2K	5%	1/4W	
R726	1-249-417-11	CARBON	1K	5%	1/4W	
R727	1-249-419-11	CARBON	1.5K	5%	1/4W	
R728	1-249-413-11	CARBON	470	5%	1/4W	
R729	1-249-411-11	CARBON	330	5%	1/4W	
R730	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R732	1-247-818-11	CARBON	300	5%	1/4W	
R733	1-249-422-11	CARBON	2.7K	5%	1/4W	
R734	1-249-421-11	CARBON	2.2K	5%	1/4W	
R735	1-249-417-11	CARBON	1K	5%	1/4W	
R737	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R738	1-202-883-11	SOLID	680K	20%	1/2W	
R739	1-202-838-00	SOLID	100K	20%	1/2W	
R740	1-202-842-11	SOLID	220K	20%	1/2W	
		<VARIABLE RESISTOR>				
RV701 ⚠	1-230-619-11	RES, ADJ, METAL GLAZE 110K				
RV702	1-238-599-11	RES, ADJ, CARBON 4.7K				
RV703	1-238-598-11	RES, ADJ, CARBON 2.2K				
RV704	1-238-599-11	RES, ADJ, CARBON 4.7K				
RV705	1-238-598-11	RES, ADJ, CARBON 2.2K				
RV706	1-238-599-11	RES, ADJ, CARBON 4.7K				
RV707	1-238-601-11	RES, ADJ, CARBON, 22K				
RV708	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				

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*1-642-940-11 H1 BOARD
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<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
H1-1	*1-564-509-11	PLUG, CONNECTOR 6P	
		<JACK>	
J801	1-573-659-11	JACK BLOCK, PIN 3P	

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MISCELLANEOUS
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⚠	1-426-358-11	COIL, DEMAGNETIZATION	
⚠	1-451-268-11	DEFLECTION YOKE (Y21PXA)	
	1-452-032-00	MAGNET, DISK; 10MM ϕ	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	
	1-452-277-00	MAGNET, BMC	
⚠	1-536-678-31	ANTENNA BLOCK (USA ONLY)	
⚠	1-537-077-21	ANTENNA BLOCK (CND ONLY)	
⚠	1-590-492-11	CORD, POWER (WITH CONNECTOR)	
SP901	1-544-283-11	SPEAKER	
SP902	1-544-283-11	SPEAKER	
V901 ⚠	8-738-752-05	PICTURE TUBE (A51JUH50X)	

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ACCESSORIES AND PACKING MATERIALS
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PART NO.	DESCRIPTION	REMARK
1-501-372-41	ANTENNA, TELESCOPIC (USA ONLY)	
1-562-443-11	CONNECTOR, ANTENNA (USA ONLY)	
3-752-986-22	MANUAL, INSTRUCTION	
3-752-986-32	MANUAL, INSTRUCTION (CND ONLY)	
3-752-986-41	MANUAL, INSTRUCTION (USA ONLY)	
*4-030-589-01	INDIVIDUAL CARTON	
*4-030-606-01	CUSHION (UPPER) (ASSY)	
*4-030-607-01	CUSHION (LOWER) (ASSY)	
*4-380-340-01	BAG, PROTECTION	

REMOTE COMMANDER

A-1470-921-A	REMOTE COMMANDER (RM-783)	
4-394-031-01	COVER, BATTERY (FOR RM-783)	

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